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# AMERICAN JOURNAL OF VETERINARY MEDICINE

VOL. XII MAY, 1917 No. 5

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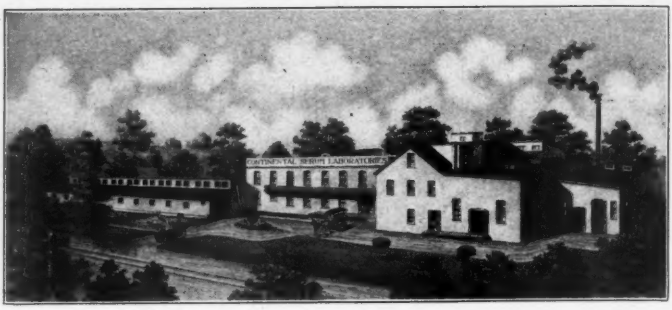

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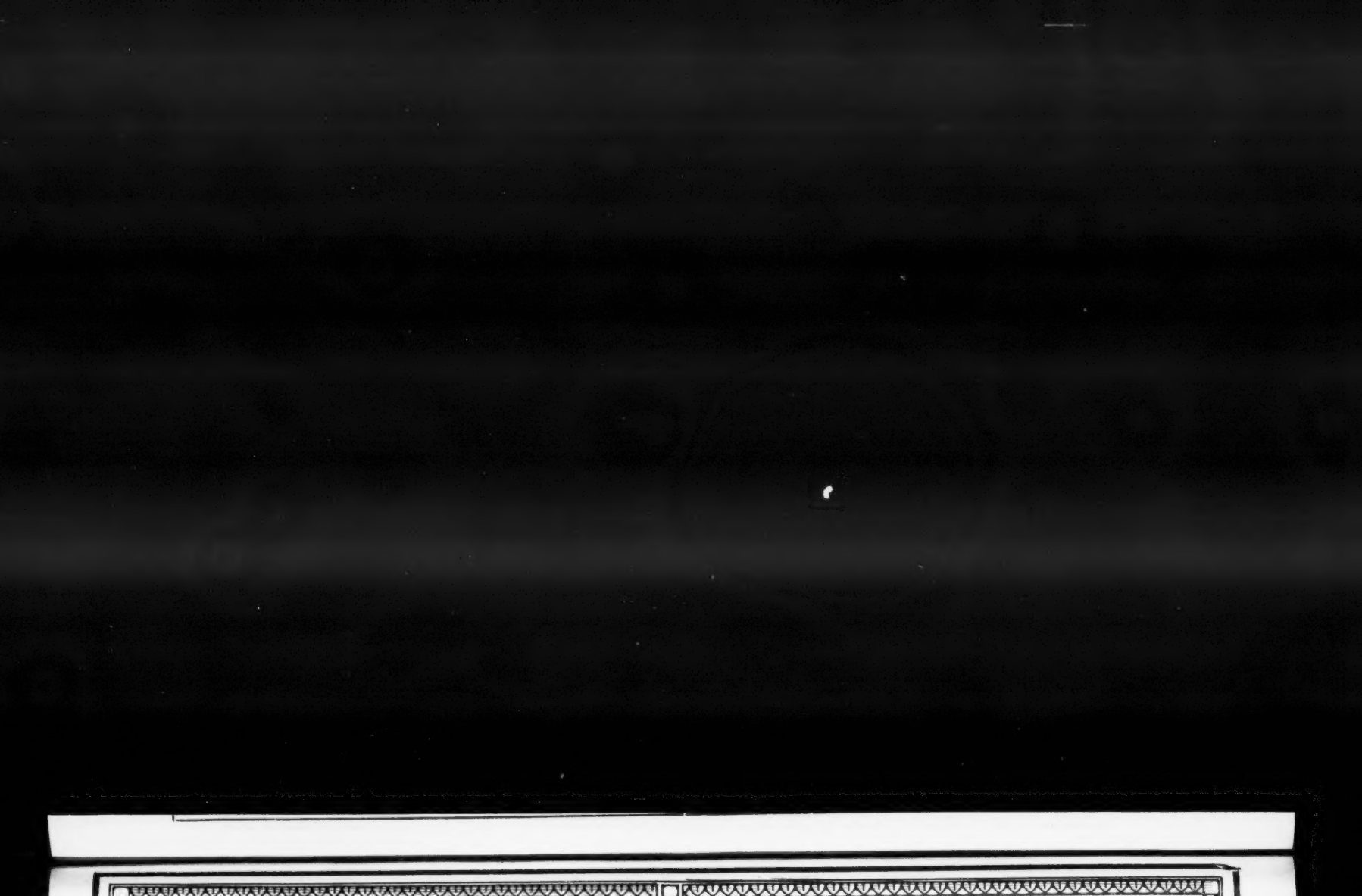

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AMERICAN JOURNAL of VETERINARY MEDICINE

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VOL. XII MAY, 1917 No. 5

# Some Useful Instruments and Appliances*

C. E. BASSLER, D. V. M., Greensburg, Kan.

TO facilitate comparison let us consider each illustration as a plate, numbered by a Roman character in its upper right corner, each instrument numbered in Arabic and their parts designated by letters.

Identical instruments on the several plates are given in the same numbers.

Plate 1 shows the entire group to be discussed, which includes:

No. 1 Headstall and anesthesia nose bag.
No. 2 Adjustable twitch.
No. 3 Hopples.
No. 4 Casting harness.
No. 6 Hoof testers.
No. 7 Hoof hook.
No. 8 Hoof and shoe clamp.
No. 9 Milk fever outfit.
No. 10 Obstetrical knife.
No. 11 Obstetrical hoop and repeller.
No. 12 Obstetrical cutter.

Plate II shows obstetrical and hoof instruments.

Plate III shows obstetrical and hoof instruments.

Plate IV shows obstetrical and hoof instruments.

Plate V shows milk fever outfit, harness, twitch and hopple.

Plate VI shows head stall and nose bag with the nose bag turned down to show their connection by the snaps (a).

No. 1 shown in plates I and VI is the mouth-closing head stall and anesthesia nose bag. These apparatus combined when properly applied make anesthesia easier in any position and possible in the standing position. In applying the head stall the head strap (c) is adjusted so that the nose strap (b) will rest on a level with the angles of the mouth, buckle the nose strap tightly and then take up all slack in head strap. This will prevent the patient from biting or breathing with the mouth and will provide better opportunity to restrain the head. If anesthesia is to be done in the recumbent position the lower nostril may be plugged if desired, though this is usually unnecessary with good chloroform. The nose bag is snapped into rings of the headstall as shown in Plate VI and then brought up and fastened to the nose strap of the headstall by the strap (d) as shown in Plate I.

This method is as useful in recumbent anesthesia as any, with the advantage of staying with the horse when the assistant fails to hold the head. It is par excellent in standing anesthesia, which is a superior method in many respects. In the standing method the patient is backed against a rope at the height of the breeching and the head is cross tied, the two ropes being held by several men. However, in selected cases I have accomplished the desired result with the aid of one assistant, by backing the patient in the corner of a box stall. A single stall is unsuitable. If standing anesthesia is done outdoors one or both hind legs should be hoppled. In the standing anesthesia the anesthetist's position is in front of the animal. This method is particularly indicated in old horses or cripples with wounds or injuries that would make throwing injurious or impossible, or where the intention is to release any of the legs after recumbency has been obtained. With good chloroform complete recumbent anesthesia is often obtained in less than fifteen minutes from the standing position. With the owner's consent I anesthetise before firing and use the standing method for giving chloroform. A better job is possible with less dan-

*Presented at the Kansas Veterinary Medical Association meeting, Wichita, Kansas, Jan. 3 and 4.

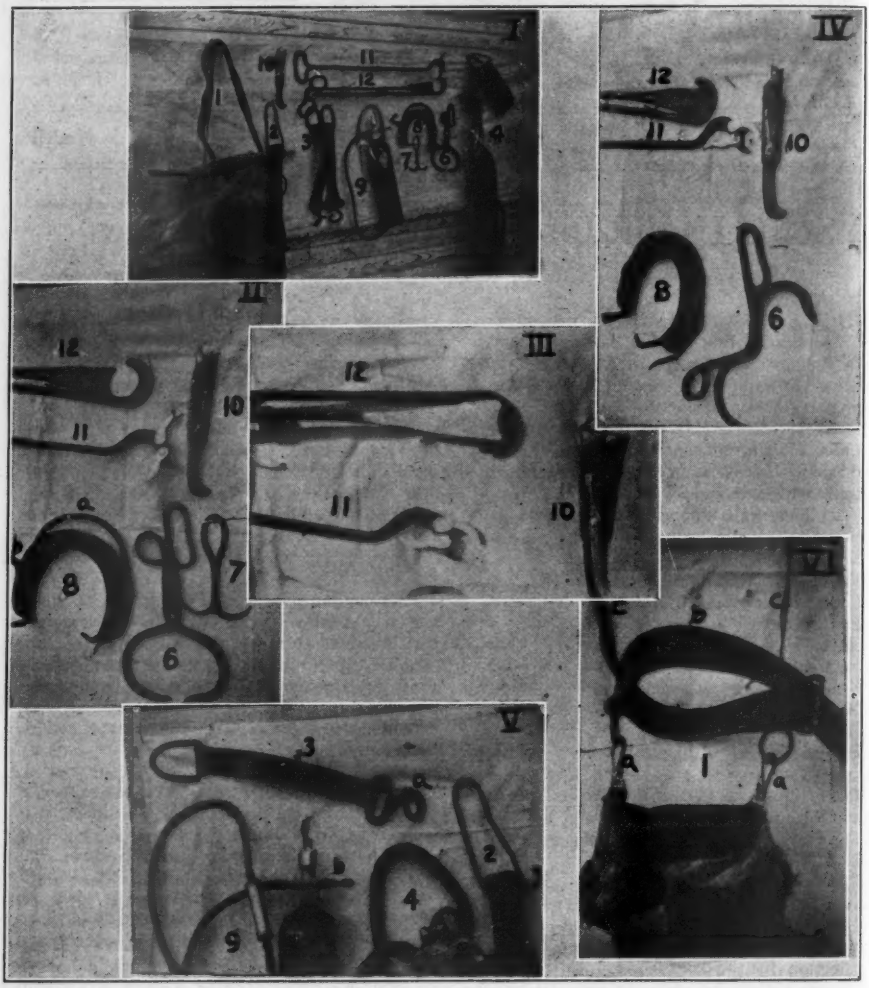
ger and demands less time. This apparatus will stimulate the more general use of complete anesthesia. In either method the anesthetic is introduced into the nose-bag with a dose syringe.

Anesthesia is too commonly used only in abdominal operations or where satisfactory restraint is impossible. It should be used in all painful operations of long duration or when operating near synovial cavities and important blood vessels or nerves. Anesthesia used with harness restraint shortens the struggles in painful operations, thus decreasing the chance of injury.

Another use of the headstall in the horse is in passing the stomach tube. In this use it is applied as before, being careful, however, that the angle of the mouth is not interfered with. The tube is passed in the interdental space and thus the operator obviates the dangers of a speculum to himself and its inconvenience to the horse.

No. 2. Plates I and V is an adjustable twitch made by boring several proper sized holes in a pickaxe handle and threading it with window-sash cord. It is possible to adjust such a twitch so that two turns will hold on the nose. As many broncos will allow only a limited time for applying a twitch the advantage of this adjustable feature can be easily understood.

No. 3. Plates I and V is a hopple with



one D-ring replaced by a hook twisted in three planes, and allowing a five-eighths or three-fourths inch rope to pass through it easily. This convenience obviates the necessity of threading a ring after passing the hopple around the leg. This also shortens the process.

No. 4. Plates I and V is an adjustable, self-locking throwing harness with detachable breast rope. The harness originally had one piece of rope extending over the back; but as this was unsatisfactory I replaced it across the back by a short broad strap with triangle rings in either end for ropes. This harness prevents burning the hands as well as the horse's pastern, and a hopple is unnecessary. I have never injured a pastern by its use. It is more easily applied than either the old-fashioned rope harness or one requiring hopples and can be completely removed before the animal rises. Since purchasing this harness I notice that the American Veterinary Supply Co. has a similar one cataloged, with several improvements.

No. 6, shown in plates I, II and IV, is a hoof tester easily manipulated with one hand and with jaws large enough to encompass any hoof. These requirements in a hoof tester were easy to meet, but have not been met by the market unless recently.

No. 7, in Plates I and II, is a hoof hook with one pointed and one flat prong. It is convenient and saves the hoof knife from contact with pebbles and other hard, foreign substances frequently encountered in horses' feet.

No. 8. Plates I, II and IV is a clamp for holding a foot to its shoe. It has a useful application in veterinary treatment where iron leg braces may be made to measure, welded to a plain shoe at the shop and later applied to the patient in the country by means of this clamp. The lever (b) for closing the clamp and the spring (a) to hold it shut are open in Plates I and II and closed in Plate IV. The prongs which hold the shoe are most clearly shown in Plate IV. This has proved to be a very useful device.

No. 9, shown on Plates I and V, is a convenient and sanitary substitute for the usual milk fever apparatus and overcomes the inconvenience that is often met with when the rubber bellows expires just at the critical time. It is essentially a tank for compressed gas with suitable connections and rubber tubing. Many have doubtless considered the advisability of purchasing such equipment, but have refrained on account of the subsequent as well as the original cost. When this outfit is purchased filled with oxygen it means that it is necessary to own two tanks so that you may have one in your possession while the other is expressed for refilling. I overcame this difficulty by duplicating the clamp (b) in plate V through which oxygen escapes into the rubber tubing. In this duplicate, however, I made a hole large enough to admit a tire valve stem which is clamped tight to the stem of the tank. An auto pump is attached to the valve stem and after the valve of the tank is opened the rest is easy and good exercise. Air obtained in this manner can be much purer than that taken from the barn by the average milk fever outfit. It is also a great time and labor saver while attending the case.

Nos. 10, 11 and 12, shown in plates I, II III and IV, are obstetrical instruments. You will notice that plates I and II show them open ready for service and plates III and IV closed and in a guarded manner to facilitate entrance into and exit from the patient.

No. 10 is a guarded knife, the guard being colored for photographic distinction. This is the best of its kind for me; but it requires some improvement to make a first class obstetrical knife, which would be appreciated by the practicing profession.

No. 11 is a combined hook and repeller so made that when one is in use the other trails idly without interfering and when both are closed it is easily and safely inserted and withdrawn through the vagina. It is possible with this instrument to save much time and to decrease the number of vaginal entrances which advantage diminishes the time required for manipulation, the danger of fatigue and repeated loss of orientation to the operator and lessens the chance of introducing external infection into the uterus.

No. 12 is a combined cutting hook and chisel. The chisel slides in retainers of the hook and when the two are closed they guard each other from tearing the tissues. They may be used as separate instruments by removing two set screws; but this can rarely be done to advantage because either one used alone is dangerous, with the danger increasing in proportion to the success in accomplishing the desired cutting. Using the two together obviates practically all danger and by cutting from both sides, each instrument guarantees a solid support for the other one to cut against. The blade of the chisel in Plate III is colored to give it clear distinction in the picture. The handle of the chisel is bent at right angles for convenience in holding the blades of both while it is being struck with the mallet.

The handles of these cutting instruments as well as that of the hook and repeller are in one piece. I don't appreciate jointed handles unless there is a separate handle for each instrument. Under the circumstances usually prevailing the constant changing of handles is no sinecure.

After allowing due credit to the fact that

design must precede manufacture, it appears that many instruments made and advertised could not have been designed by those personally acquainted with their purpose and use.

The conception of the articles discussed in this paper have presented themselves to me on various occasions through the conditions in practice and they have been evolved to fill the void of a satisfactory commercial article. The market offers no efficient or practical substitute for many of the instruments or appliances.

# Diseases of the Carpus*

By JOSEPH HUGHES, M. R. C. V. S., Chicago

WE usually see carpitis under two forms, one the infective and the other the non-infective. The infective form is caused by injuries to the knee, for instance, from punctures or by the horse falling on paved or macadam streets. When he does so, he falls with his knee flexed, and the consequence is often very serious. Very often the tendons over the knee are completely divided, and we find a large pouch of skin that is so contused that it sloughs, leaving an opening that exposes the ligaments and sometimes we can see into the interior of the joint. As a consequence infection is implanted in there, and we have a very serious case. The common site of this trouble is about the intercarpal articulation, and it requires a prolonged treatment. Very frequently it leaves the horse with a scar that makes him a blemished animal ever afterwards unless a clever surgeon takes his knife and by means of skillful dissection removes the scar, draws the skin together and stitches it so it may do away with the disfigurement that would otherwise mar the horse.

Once a horse falls, he will fall again. The reason is that there are adhesions between the skin, tendons, tendon sheaths and ligaments, so that the knee is stiffened. The consequence is a tendency for the horse to fall a second time. No one would think of passing a saddle horse with a scar on his knee, because he is a dangerous animal.

### Cause of Continuous Standing

With regard to the non-infective carpitis, this is an affection that for many years escaped notice. I think it was sixty or seventy years ago that attention was called to carpitis being the common cause of lameness in horses and the frequency with which it was connected with navicular disease. The lesions in non-infective carpitis start in the lower articulation between the metacarpal bone and the lower tier of carpal bones. It is slowly developing condition that involves this lower synovial cavity. There are three superimposed synovial cavities in the knee. If one of these becomes inflamed, the inflammation is of a self-limiting character, that is, non-infective inflammation, so that it will be limited to that one. In other words, if the inflammation starts in the lower synovial, it will confine itself to that region. The consequence is that we have a disease of the carpus that is frequently overlooked, carpo-metacarpal arthritis. There is very little deformity in connection with the condition. There may be a slight enlargement, but very little. The symptoms that it gives rise to are rather peculiar. One of the physical conditions is that the horse has not normal flexion of the knee. Normal flexion in the knee consists in bending the knee so that the posterior part comes up against the forearm readily. If there is a slight space there, through which one can pass the finger when the knee is flexed, such a condition should be considered suspicious. A horse in such a condition does not as a rule lie down for the reason if he lies he has to bend his knees against him. They do lie down sometimes in the box stall; but if I find a horse not lying, I go to the knees and find the explanation there. They are stiff. The gait of the animal is peculiar. He tries to throw the weight on the soft structures behind the knee, and his tendency is, if he is affected only in one limb, to stride slightly longer with that limb than with the other one. Consequently, he goes on his heel and wears the heel of his shoe. The toe is invariably worn in navicular disease, whereas here the heel is worn.

### Hygroma That Disappears Spontaneously

So much for infective and non-infective carpitis. We now come to take up hygroma. Any one who has had any track experience must have noticed that the two-year-olds at the end of the season very frequently retire lame, and if you observe them during that winter, you will find that a gradual distension occurs in the form of transverse enlargements that appear opposite the articulations. These are merely synovial dilatations that occur apparently

*Lecture delivered before the Chicago Veterinary Society December 12, 1916.

during transition to the mature bone, and an irritation is set up and a certain amount of synovitis is produced. The result is that it is a very common experience to see three-year-olds fired on the knees. I used to question firing two or three-year-old horses, but all the same, these go into the three-year-old form and win the races, and one will be told that "this horse was lame in the knee and I had him fired during the winter." That is a condition we should be able to recognize, although ordinarily it is not found in the city horses as we see them on the streets.

**Hygroma Due to Contusions**

We differentiate this from the other form of hygroma that develops in connection with the tendons that pass over the knee. In front we have the tendon of the extensor carpi radialis (extensor metacarpi magnus, we used to call it). To the side of that and laterally we have the tendon of the extensor pedis. Behind that on the outside, is the tendon of the extensor suffraginis. Then we have crossing it a little structure called the extensor metacarpi obliquus. These tendons all have sheaths. We have another sheath investing the extensor of the digit. Now we have to take into account these sheaths, especially in the old and much to be pitied coal wagon horse in the city, the fellow that has bumps on his knee. In trying to start a load, he slips and comes down on his knees with terrific force, perhaps on a smooth surface. These tendons are greatly contused and a dilatation develops as a big enlargement giving rise to a swelling of this kind. The only treatment is the knife. It is wholly a sheath that is contused badly, and that contusion stimulates an over-secretion of synovia, and there is an outpouring of serum on account of it. In my opinion, the earlier we open one of these swellings and drain it, the better. Having opened and drained it, we feel inclined to inject it with a weak solution of iodin. It is rather a slow process, but it leaves the knee in a more respectable condition than if we allow it to go on and become indurated and organized. Once a horse gets one of these organized developments, he will fall with great regularity. He is insecure on his feet. We recognize these swellings because they run vertically instead of transversely as do the hygromas that are connected with the articulation.

**Tendinous Synovitis a Stubborn Affection**

Coming to the posterior part of the knee, we have a very common affection and a very insistent one, a condition that is very rebellious to treatment. Any one in practice any length of time must have run up against this. I am alluding now to posterior carpal synovitis. Back of the knee is the large flexor muscle and it is succeeded by a tendon that proceeds to the flexor pedis perforans. There is a great elongated sheath that comes up there, and this sheath is a very complicated structure; when a horse gets an affection of this tendon, and the sheath, we call it a tendinous synovitis. I might state that the tendon sheath has a peculiar structure. When the normal tendon is covered with a sheath, the sheath is firmly adherent to it, but this differs from it somewhat in that it is not so enwrapped. We have a very persistent lameness when we get an inflammation of this extensive sheath back of the knee. When this occurs, it not only affects the tendon of the flexor perforans, but it affects the check ligament that joins to the tendo-perforatus, and in doing so it also is reflected on to the groove in which it plays. When this structure becomes inflamed, the repair may be looked upon as hopeless under ordinary circumstances. If there is a more persistent lameness than that which affects this posterior carpal sheath, I would like to know it. One may blister that, but it won't benefit it; he may fire it, but it won't help it. One may open it above and below and attempt to drain it and inject it. All of this will have no effect on it, and finally he will be obliged to resort to an operation. There is just one operation that will benefit that condition and only one. I am referring now to median neurectomy, and there is a way of performing median neurectomy that will not benefit this condition, and there is a way that will benefit it. Back of the posterior radial artery, we have a vein, and sometimes there are two veins. Lying ordinarily behind that vein, is the median nerve. The median nerve is a wonderfully large structure—it is as large as a finger. The median nerve gives off a branch and then plunges deeply down behind the radius. The consequence is that unless we want to dig for it, we have to operate very high up. I always try to get at it where the main trunk of the nerve gives off the branch and divide it there. We do not get good results by operating on this main anterior trunk—we have to take out the anterior branch as well.

**Interfering**

We now come to that condition called knee knocking, and if there is a meaner thing on earth, I should like to know what it is. But if a man will adopt a tedious prolonged course of training, and good judgment, he can overcome it. A knee-knocking horse is ordinarily a high going

horse. He strikes the internal arcades of the knee from four to five inches above the knee down to the upper part of the metacarpus. Once a horse strikes himself, he will tend to strike himself again. It is a known fact that a horse will go clear of himself for years, although he brushes perhaps with the fetlock and he is touching every hour of the day as he moves along and still he never hits himself. But let him once have a shoe partially torn off, and he rubs the fetlock. The result is he turns out to be a chronic interferer. The question is why does the horse go out today and go five or six miles and not touch himself, and as soon as he strikes himself, he will go on three legs a little way and after settling down, he strikes himself again and again. If the horse is a race horse, he becomes a worthless proposition. One might ask why a horse does that, and there is a simple explanation. It is merely this, that the pain he inflicts upon himself causes him to alter the direction of the line of weight. He travels with the injured side of the limb nearer the center of gravity in order to throw more weight on the outside. The consequence is he hits himself again and again. It is a question of faulty conformation, but we can get him to go clear by a long process of careful shoeing. We should keep weight off the feet of a horse of this kind and shoe him in the lightest possible manner and get him to go as near to the ground as possible. Then try to reduce the lump that often forms at the knee by putting a plaster cast on it, and by a system of compression for a length of time we will eventually get it to disappear. In the meantime it is up to us to shoe that horse so that he will break equally on the outside too, rasping off the shoe on the outside so as to give him as large and free a roll as possible. If we do this, especially in road horses, we can control this habit of knee knocking. Sometimes the bump that is created by the horse hitting himself is so large that we have to open it.

### Relief of Sprung Knees a Simple Matter

Then there is the matter of sprung knees. What are sprung knees? Sprung knees are due to the contraction of two muscles on the back part of the forearm, the flexor carpi externus and flexor carpi medius. It is generally admitted and well known that two tendons here are responsible for sprung knees. At the same time we must admit that horses have a hereditary predisposition to sprung knees, but not all horses. It would look as if the articular surfaces of the bones of the knee were abnormally shallow and gave an inclination for the knees to dip forward. In such cases it is questionable if an operation is to be depended upon. At the same time I want to tell you if you ever examine a stallion that is sprung kneed and you pass him as free from hereditary unsoundness, that horse will procreate his kind and give rise to a group of horses bent over at the knee. The operation performed is division of these two tendons and is of a very simple nature. There are no vessels in the immediate vicinity that can be injured and no nerve that can be injured. Merely a division of these tendons is sufficient for the relief of a badly sprung kneed horse.

### Malleanders

A condition in draft stallions that is rather common and that affects the back part of the knee. I am alluding now to what we call malleanders or a crease in the skin that affects animals in this region. One finds stallions with a deep crease and the skin is thickened. These malleanders are very obstinate at times to treat. Personally, I merely clip the hair off, scrape and scrub until I remove the collected scales and then I blister with biniodid of mercury.

### High Splints

There is also a disease that affects the knee at times due to extension of a high splint. There is a little depression between the splint bones and dipping into that depression comes down a fold of synovial membrane from the lower carpal articulation. When a splint develops high, it is not beyond possibility that it may involve that little space and produce a carpal-metacarpal synovitis resulting in a stubborn lameness.

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## Biennial Report of the State Veterinarian

By A. W. French, D. V. S., Cheyenne, Wyo.

The report covers the period from September 20, 1914, to September 30, 1916. The estimated value of the livestock in the state is placed at $90,000,000. The following diseases are those reported as most prevalent during the period covered—abortion, actinomycosis, blackleg, calf diphtheria, catarrhal conjunctivitis, dourine, exanthema, foot rot, forage poisoning, glanders, hemorrhagic septicemia, hog cholera, influenza, mycotic gastro-enteritis in elk, scabies both in cattle and elk, white scours, swamp fever and tuberculosis. Dr. French states, "A few letters regarding the imaginary diseases of livestock, known as 'hollow-horn,' 'wolf-in-the-tail,' 'loss of cud,' and 'black tooth,' were received; but this is not surprising when we consider the fact that veterinarians in the state are very scarce."

# Common Parasites of the Digestive Tract*

By FRED M. MAXFIELD, Tama, Iowa

IT is the conviction of the writer, and I believe it should be of every practitioner in the state of Iowa, that the question of entozoa parasites is worthy of our consideration and should have more attention given it in our daily practice.

Parasitic disturbances of the digestive tract, either in the human family or in animals, have a deep significance and is deserving of special study. These disturbances made manifest by certain symptoms are so similar to other conditions that differentation is at times very difficult and diagnosis even more difficult. The least importance in the study of parasitism of the digestive tract is the ability to recognize the different individual parasites and place them in their proper classification. We should know to which one of the three branches they belong,—the Arthropoda Vermes, or Protozoa. Perhaps we should know the life cycle. We may have the names at the tip of our tongues, the medicinal agents to be used and their proper dosage, accurately in mind, and if we are not skilled in the ability to recognize the symptoms made manifest by the harboring of these parasites, or our suspicions are not aroused to the point of administering medicinal agents from a diagnostic point of view, when there is an absence of these manifestations, we have failed in the field of practice to meet the fight against these parasites.

It is exceedingly difficult at times to tell when our patients are harboring parasites and when they are not. We can not be guided wholly by certain manifestations, neither can we say in their absence that there is no infestation. For at a later date we may be informed by the owner or learn upon autopsy, that the case was one of parasitism. When we find colts and young horses in an unthrifty condition made manifest by lack of vitality, or ambition, thin in flesh, the coat long and rough and when there is no history of other previous diseases, we can reasonably conclude their condition is due to bad teeth or parasites. In some instances both conditions are present. It is not sufficient to correct the teeth alone, nor expel the parasites and neglect the examination of the teeth. Having verified the diagnosis, or wish to give medicinal agents from a diagnostic point of view, the most important thing above all **is dieting the patient** before administering the desired drugs. The results in either case will be quicker, surer and more lasting.

*Read at Annual Meeting Iowa Veterinary Medical Ass'n, Ames, January, 1917.

### Parasitism Revealed by Chance

Last November the writer was given a puppy that was weaned at six weeks old. She was fat, her coat of hair silky and glossy, having a regular appetite. She was very vigorous in her romping for exercise. I gave this puppy a tablet containing calomel and santonin, as an experiment. The puppy was fasted over night, the tablet given in the morning and in less than forty minutes, a handful of round worms were expelled.

### Unsuspected Parasitism

On Thursday morning, October 12th, about 9:30, I had a call to come and see a sick colt that had been weaned the preceding Monday. The owner said over the phone, "He had found the colt sick in the box stall when he went to the barn to do the morning chores; that the colt was still up, not bloated; no intense perspiration and apparently had not wrestled around much through the night." After driving eleven miles, I arrived at the place and found the colt down, very weak, with all extremities, the nostrils and breath cold. Visible mucus membranes pale and blue. The temperature 104° F., pulse imperceptible, heart action weak and accelerated. In regards to diagnosis this was said, a possible internal rupture; or may be an obstruction of some kind in the intestinal tract and perhaps the case may be primarily due to worms. Prognosis death in a couple hours regardless what we might do. Death occurred during the noon hour. On autopsy we found: A rupture of the small intestines with the feces and multitude of round worms in the abdominal cavity. Opposite of the rupture on either side, a distance of a foot or two, there were weakened areas of the intestinal wall. A peck of these worms were obtained from this subject. The farmer said: "Who would have thought it? It was only Sunday, I told my nearest neighbor, this is the healthiest colt I ever raised."

These two instances are ample illustra-

tions where susceptible animals were in apparent prime physical condition and parasitism was revealed. In the puppy by heeding and acting on an impulse, and in the colt disclosed on autopsy.

### Taeniasis of Many Years' Standing

There is a family in our town that has had a long, tedious and a discouraging experience over a period of five years, with their sixteen year old daughter. Their little daughter, at the age of nine was failing in her class-room work. They noticed her strange nervousness and excitability. Weeks and months passed with these peculiarities growing more pronounced and aggravated. She gave up her school work. Then there came a time of apparent complete nervous break down. A gradual decline of the general physical condition. At times a complete loss of appetite, followed by a ravenous hunger. Menstrual periods appeared early in life and soon became irregular in frequency and in their flow. Some time during the latter half of the fourth year, this girl experienced spasms, convulsions, and as some doctors said—epileptic fits, hysteria. And not until nearing the end of the fifth year was she relieved of her misery and suffering. During this period of five long years, her faithful and ever hopeful parents spent time, effort and money far and wide, to see if there was not some thing or some body that might bring relief to their daughter. The local physicians, and when I say that I mean in the adjoining towns as well, had their respective trials and the results were failures. The parents took their suffering daughter to Marshalltown, Waterloo, Cedar Rapids, Iowa City and Des Moines. She was taken to Chicago, New York City, Kansas City, and to Rochester, Minn. Three local Doctors believed her condition one of taeniasis, but their efforts and medication failed even to the extent of not expelling any segments. At one of these cities, and I don't know which one, she was circumcised and received treatment for falling of the womb. At Rochester her tonsils and adenoids were removed. The Specialist at another place, insisted that this was a true case of "nymphomania" and recommended ovariotomy which was not performed.

About the end of the fifth year the father learned of a taenia specialist. It was two months before he had an opportunity of an interview and an examination made, which was held at Des Moines, two years ago. After the Doctor had obtained the history of the case and had the girl under his observation for an hour, he gave as a tentative diagnosis, with some degree of certainty, that of taeniasis. The doctor told of the dieting process before attempting to expel the tape worm or even for a diagnostic purpose, to obtain ripe segments. But the girl experienced one of her convulsions in the presence of the specialist and this scene moved the doctor to action. He asked how long the girl had fasted and the father said, "twenty-four hours." After a short explanation for mutual understanding, the doctor administered his desired medicinal agents at ten o'clock that night. At eleven he followed with a brisk purge. And at three o'clock in the morning there was an expulsion of a tape worm thirty-six feet long besides multitudes of scattering segments.

This striking instance has two important features. The one,—a case manifesting symptoms of internal parasitic disturbances with failure to recognize the condition. The other,—those few who believed in the possibility of the infestation failed in their treatment, even from a diagnostic point of view.

Repeating the emphasis, we have,—First, as the paramount issue, the ability to recognize the harboring of internal parasites and having possible suspicion in susceptible animals when there is an absence of these symptoms. Second,—that the patients should be dieted before being given medicinal agents, even for diagnostic purposes.

### Taeniasis in a Dog

In the latter part of February, 1916, I was consulted at the office in regards to a hundred pound bull dog that was in prime physical condition which experienced a deranged appetite. The complaint was that this dog would have an enormous appetite one day, and then would not eat for a few days, or would eat heartily for a few days, then fasted for maybe a week. At times the dog would be found chewing old rags or pieces of wood. The owner was given a laxative tablet to be given to the dog, with instructions to watch for any white segments that might be expelled. The next day, I was informed that there were many such things expelled. We waited for the next fasting that the dog experienced. He fasted for two days and one day was spent in forceful fasting. The dog was given at one dose, two drams of the oleo-resin of male fern and forty grains of powdered areca nut in a half ounce of simple syrup. In forty-five minutes he expelled five tape worms. And on the 24th of March (18 days later), the treatment was repeated and he expelled three more.

### Parasitism Apparent Only When Worked Hard

One Sunday morning, last May, about nine o'clock, I had a call as follows: "Come

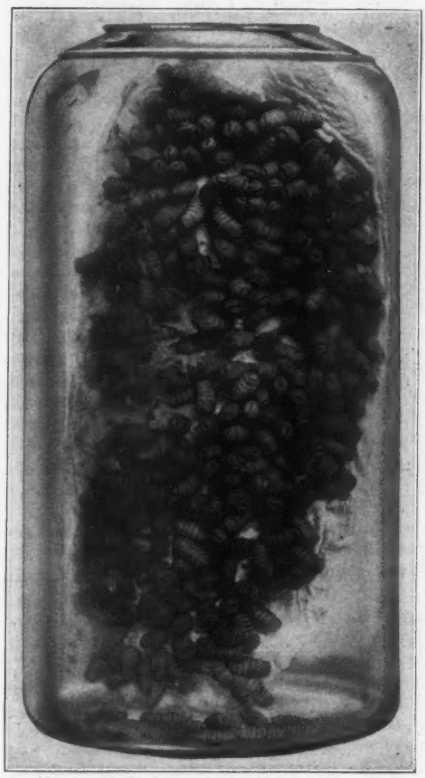
quick, for my horse is coming down with pneumonia. I found her sick when I went to the barn." The distance to the farm was only three miles. And we all know how fast Fords will some times travel, yet I arrived only to find the animal dead. She was a large black mare, twelve years old. She lay in the feed way, propped up against the manger, with all four legs underneath her body. The entire body was steaming with perspiration. The visible mucus membranes were white. The owner said, "Before the horse dropped in this position, she was breathing fast, short and hard." My statement in regards to the case was that the horse had an internal rupture of some kind. Perhaps of the stomach. Upon autopsy, we found a rupture of both the stomach and diaphragm. No food content in the small intestines. We removed a half bushel measure full of tape worms. The liver and kidneys were hypertrophied. The owner remarked that this mare was always in fair condition and shed her hair regularly and withstood ordinary working, he had never been able to get her fat and in the spring season under the heavy grind, her weight reduced considerably.

**Strongylus Gigas Discovered by Accident**

About the first of December, the mayor of our little city called me to hold a post mortem examination on two dogs out of five that were found dead in the eastern portion of the city that morning. During the autopsy of the first dog, an enormous worm rolled out of the abdominal cavity onto the floor. It was a deep cherry red, and was about two or two and one-half feet long. I pronounced it a specimen of Strongulus gigas. In this case, the dogs were thought to have been poisoned or shot, and I believe they had been poisoned, but this worm had caused extensive inflammation.

**Serious Infestation of Bots**

The accompanying illustration represents a portion of the gastric wall enclosed in an ordinary one quart, self sealing fruit jar, with its entire surface completely studded with the larva of Gastrophilus equi. I was called the 5th of May to see this four-year-old horse, which was found down and could not rise. The owner said that under the springs' work, the horse had been continually growing thinner and weaker. The day preceding my call the horse had worked in the forenoon and during the noon hour had lain down and since had not been able to rise. I found the horse down, emaciated, very weak and restless. Occasionally it would attempt to rise but failed. By helping him he was able to raise to a sternal position. In this position he ate heartily and drank freely. The heart action was weak and accelerated; the pulse was imperceptible. Breathing was labored and irregular. Temperature, 102° F. Peristalsis was intermittent. Upon examination of the teeth, they were found to be in a very bad condition. Sharp enamel projections; arrested development of the first two lower premolars on the left side and the opposing upper premolars were excessively large and long. Since the owner had three other young horses in work that were failing as this one did I returned the next day with my dental instruments. The horse that



was unable to rise had died during the night. The other three horses needed dental work and this was attended to. And each horse received a vermifuge bolus followed in six hours with a purge. The result was that each horse expelled both worms and bots.

On autopsy of the dead horse, we found on the gastric wall two areas completely studded with these larva. The duodenal orifice was also studded. Even in this specimen one can see the trace of the extensive gastritis.

### Discussion

DR. S. STEWART: I was very much interested in part of this paper. It involves a phase of veterinary practice and experience which every practitioner must meet. Whether he meets it successfully or not depends much on himself. These reports bring to our mind personal experiences—they must to all of you. I was particularly interested in the large, flat worm that is found in the horse, Taenia plicata, and remember very well that twenty years ago, we had the notion that horses in this section of the country did not have an invasion of such parasites. There was no literature indicating that any horse in any part of the United States, except southern Texas, had ever revealed the presence of these parasites, but in these later days we are learning that it may be found in various parts of the country. I remember a few years ago a man wrote from southern Missouri, saying he was losing some colts, and the correspondence led him to send specimens of some of the things his colts were passing through their feces. We opened up one of them and found some elongated bodies. This was followed by a visit to the ranch, and we found he had lost fifteen or twenty young horses altogether, probably because of the presence of this flat worm in considerable numbers in the intestinal tract. Since that time, we have learned of its presence in other parts of Missouri, Iowa and Nebraska, and we do not know how wide this invasion of the flat worm parasites is in the horse. The round worm parasites, of course, have been commonly known for a long time.

A MEMBER: Did you ever have much success in diagnosing Taenia?

DR. MAXFIELD: In my practice, I have run across only two cases, and diagnosis was made on autopsy in both cases. In this case just reported the horse was dead when I arrived at the place, although in fine physical condition, and one perhaps would not have suspected a parasitic infestation. The other case was published in the AMERICAN JOURNAL OF VETERINARY MEDICINE. That horse had strangles and died, and on post mortem examination we found a multitude of Taenia. I believe that by a thorough dieting and giving a large dose of a taeniacide followed with a purge, one might get a diagnostic result.

DR. W. W. DIMOCK: During the last two or three years, I have had considerable correspondence with Doctor Maxfield regarding parasites of various kinds, and I can assure you that he has found a good many parasites that he has not shown here this morning. I was thinking that Doctor Maxfield sent another species of the tapeworm from the horse, the little short one known as Taenia mamillana. I know at least we found several of these horses in this community. It seems there are two phases in this question of parasites that ought to be of vital interest to practitioners—one is the life history of animal parasites, and the other, the treatment. I do not know much about the treatment for parasites myself because I am not directly connected with that phase of it. But if we are going to successfully combat the various forms of parasites that affect the various domestic animals, one of the very essential things is to know the life history. Take the question of tapeworms in dogs—how many times do you suppose it happens in this state during this time when everybody is hunting rabbits, that they feed those rabbits to dogs, that is, they feed the viscera and various parts of the rabbit? You know, of course, that tapeworms have various stages of development, and all forms of tapeworms must live at sometime as cysts in an intermediate host. In two of the tapeworms in the dog, the cystic stage is found in the rabbit. They are very prevalent in rabbits in this section and all over the country as far as I know. Therefore, it seems to me it should be a policy with veterinarians to advise people against feeding rabbits raw to their dogs. There are three other tapeworms that live in the dog, their cystic stages being found in the sheep. Two of them are not very common in this section, and one is more or less common. The Taenia marginata in its cystic state is known as the Cysticercus tenuicollis, a large bladder-like body found in the peritoneum. The Taenia coenurus develops from the Cysticercus coenurus, which in the brain of the sheep produces the condition known as gid. There is another form, the Cysticercus ovis, worked out by some man connected with the Bureau of Animal Industry. For a long time, this was put down as a misplaced Cysticercus bovis, but a more detailed study showed that we were not dealing with the Cysticercus bovis in sheep but distinct species that lived in the dog. There are many tapeworms and one that has the cystic stage in the flea.

### Sanitary Measures Necessary to Combat Parasites

I am particularly interested in round worms, and there has been some work done on the treatment and eradication of these worms. Chickens are exceedingly full of worms, as a rule, and the dogs of this state are more or less affected with these round worms. While it is true that these worms are readily expelled by medicinal agents, it is also true if you wish to eradicate these parasites from the herd or flock that is affected, it is absolutely necessary that you destroy the eggs that are expelled as a result of the adminis-

tration of the medicine. I do not suppose there is one case in a hundred where any precaution is taken to clean up the grounds after the administration of the medicine and the expulsion of the worms.

### An Experience With Poultry Parasitisms

This experiment was made in California. In some of the large poultry establishments there, they were having some serious difficulty in fattening chickens because they were so full of these parasites. They made three pens and treated two pens and left one pen without treatment. In one of the pens they treated, they cleaned up the ground and disinfected in a way that was sufficient to kill all eggs that might be present. One pen that they treated, they did not clean up, and then they left these chickens there for several weeks. Then they held post-morten examinations on the chickens in all the pens. In the pen where they had cleaned up the ground, they found the chickens free from parasites, and in the pen where they had administered the medicine but had not cleaned up the ground, they found most of the chickens had become re-infested and there were innumerable parasites in the intestinal tracts. Of course, in the pen where no treatment had been given, the parasites still persisted.

That same method is practicable with other animals, and I believe we should come forward and advocate it. In my opinion, it would be very advisable to recommend to the owner to spend a day or two cleaning up his pens. Take the Cysticercus cellulosae of the pig. What tax do you suppose that is on the hog industry in this state? We have estimated here that pigs affected with the Cysticercus cellulosae and dying from that cause, amount to one to two per cent of the total number of hogs in this state, and on the basis of $5.00 apiece and an aggregate of 9,000,000 hogs, it would mean a sum of $400,000 or $500,000. This includes only cases of loss where the Cysticercus cellulosae infests the bile duct, to say nothing of the failure to gain and the runts that it causes where it does not kill. The failure to gain is due to the Cysticercus cellulosae, and the animal fails to thrive. It would take very little figuring to show we are losing millions of dollars in this state annually from the effects of animal parasites.

### Parasites and Intestinal Twist

DR. H. B. TREMAN: One case report that Doctor Maxfield presented of a colt that was in splendid condition is quite characteristic of the cases we find. I have found several of them just this fall. I found a colt that was apparently in the pink of condition. He was taken violently ill and died a couple of hours after I got there. He was bloated badly, and it was very hard to make a diagnosis, but on account of his being bloated so badly, I tapped him and I think there were three small round worms that came out through the cannula. That was a new experience for me, and then on account of the character and the odor of the fluid material that came out through the cannula, I diagnosed it as stoppage of the bowels due to a twisted intestine. The colt died soon, and we found at least a peck of these round worms and also quite a number of folds on the small intestines twisted. Why that twist occurred at this particular time along with these worms, is kind of a question. I did not understand why they occurred together or whether it was just a coincidence. There is one thing I should like to have discussed and that is the treatment.

### A Course of Treatment Necessary for Parasitisms

DR. E. L. QUITMAN: First, I wish to compliment Dr. Maxfield on the able manner in which he presented this subject and especially on the beautiful manner in which he presented the specimens, nicely gotten up and very creditable. Like our worthy secretary, I expected him to go a little bit deeper into treatment. Like every other practitioner I have had my share of experience in the treatment of worms of many species in various animals, and while I agree with Doctor Maxfield fully as to the necessity of dieting the patient, I use what I call the quick treatment, working along the line somewhat promulgated by Doctor Dimock. The prevention of infection is an altogether important feature and I think is recognized in dog kennels and in stables. I have maintained, for many years, that this thing of giving one or two doses of a vermifuge or vermicide and then considering the patient free from worms, is an error. We should do it so as to relieve the animal as quickly as possible of the multitude of parasites that he perhaps has in him, but there is no vermicide that destroys the ova. What are we going to do as these ova are hatched out? Oddly enough, according to my observation, it seems that adult worms succumb more readily to vermicides than do young worms. Whether it is an error of judgment on my part or not, I do not know, but I make it a practice and also preach it, to give the patient whatever the vermicide may be, to get rid of the multitudes of worms as soon as possible, and then keep up a long course extending over a matter of two to six weeks' treatment with some drug, preferably arsenic. There is no one drug that is destructive to such a large variety of parasites as arsenic. We have our various vermifuges—this drug for tapeworm, this for round worm, this for hook worm, etc.; but arsenic keeps up a slow poisoning of the worms, and many

times after getting a peck of worms from a horse by some treatment or other and perhaps in a few days repeating the treatment getting more worms, if then we put that patient on Fowler's solution of arsenic, several weeks afterwards there will be small worms continuing to escape from that animal. The logic of the treatment is to keep up a form of poisoning of those worms over two to six weeks, so that any worms that the vermicide does not expel in the first place will be destroyed before they have had time to reproduce.

As for the treatment, I do not know that I can offer anything special insofar as the vermicide is concerned. My favorite vermicide for the horse in the case of the common round worm is a course of tartar emetic, two drams given twice daily in the feed for a period of about six or seven days and then if conditions permit, a good purgative. After that I like to put the horse on a solution of arsenic in fairly liberal doses, or about three-grain doses of arsenic trioxid with a dram to two-dram solution of sulphite of iron. This serves as a tonic as well as a vermicide.

**Gastro-Intestinal Lavage Effective**

In the dog, I vary my vermifuge treatment. In my own hospital practice, we usually make very quick and thorough work with gastro-intestinal lavage. The method works so well that we are getting a special clientele on that score alone. We first administer a thorough purgative, preferably a saline, to empty the bowels, of course, as much as possible. Then with just ordinary soap solution, using several gallons, we first free the bowels of all material by letting a certain amount run in and letting it be ejected again, and finally after a little while, especially helped by elevation of the hind quarters of the dog, the fluid will come out of his mouth as fast as it runs into the rectum. That is the most efficacious method, as it will wash out every worm in the dog; it tends to wash out the ova and also to free the system of the excretions of the worms that so often seem to cause various forms of toxemia. After flushing the dog with the soap solution, we usually flush him freely with a normal salt solution, expecting some of that to remain, which will tend to ward off the slight prostration that sometimes results from the operation. If the dog is very weak, we postpone the gastro-intestinal lavage until we get him braced up.

So far as drugs are concerned, I use those used by all other scientific veterinarians, calomel for tapeworms or the like, and a mixture of chloroform and turpentine made into a nice emulsion; but unless we use the gastro-intestinal lavage, I always prescribe a prolonged course of Fowler's solution of arsenic after freeing the animal of what he has. That is another way of preventing re-infestation. Dr. Dimock says, I believe, that this can be done by destroying the litter on which the feces of the other animals are discharged. However, if there is any objection to doing that, these animals might be put on a course of Fowler's solution of arsenic for several weeks, which would be the next best thing to the destruction of the bowel discharges, as it would tend to break in on this life cycle of the parasites.

**Round Worms the Rule in Hogs**

DR. G. A. JOHNSON: Dr. Dimock brought up a very important point as to the transmission of the parasites or their continuation in a herd. I am speaking especially of the long round worm in hogs. My observation is that it is not difficult to rid a hog of these worms, but it is mighty difficult to keep the herd free. Dr. Dimock spoke of cleaning up, which is a good proposition; but one point which I think he did not bring out is the treatment of the entire herd. I venture to state that you can go out here and take the droves of hogs as they run on the farms and 90% to 95% will show more or less worm infestation. The usual treatment given for worms is to treat the pigs. As a matter of fact, the large, fat hogs are nearly as badly infested as the small pigs. Any one who has had experience in packing house inspection knows that pretty nearly every carcass dressed has more or less worms. Now if the large hogs are not treated, it is only a matter of a short time until the small pigs become re-infested through the eggs expelled from the large hogs. In order to make a success of ridding the hogs from worms on the farm, it is necessary to treat the large hogs as well as the small pigs, and if it is done in a place where the pigs can be confined after treatment in premises that can be cleaned and disinfected, one will make much better progress.

One can very successfully rid a drove from round worms with large doses of iron sulphite. It must be given in five or six doses about a gram to a 40 or 50 pound pig twice a day, and then followed up with magnesium sulphate.

It is practically harmless so far as the effect on the animal is concerned. Probably among the better remedies, santonin and calomel give quicker results than the iron sulphite, but the ordinary farmer does not usually treat his animals individually, and this is a farm proposition. The price of santonin is high at the present time, and I am inclined to think that sulphite of iron will give fair results if it is persisted in. I do not think, as Doctor Quitman has so

(*Continued on page* 314)

# Sodii Cacodylas (U. S. P. IX) Sodium Cacodylate

**(Official Abbreviation, Sod. cacodyl.)**

**By E. L. QUITMAN, V. S. M. D. C., Chicago**

THIS is sodium dimethylarsenate ($Na(CH_3)_2AsO_2$), the sodium salt of cacodylic acid (dimethylarsenic acid) with a somewhat variable amount of water of crystallization. It contains not less than seventy-two per cent nor more than seventy-five per cent of $Na(CH_3)_2AsO_2$ or absolute sodium cacodylate. It should be preserved in well closed containers.

Sodium cacodylate occurs as white, odorless, deliquescent prisms or as a granular powder. It dissolves in about one-half part of water and in about two and one-half parts of alcohol at 25° C. (78°F.).

It contains 46.8 per cent of arsenic, equivalent to 61.8 per cent of $As_2O_3$ (arsenic trioxid) It is obtained by exact neutralization of cacodylic acid, which is dimethyl-arsenic acid $(CH_3)_2AsO.OH$. Cacodylic acid is related closely to arsenic acid, being a dimethyl derivative, as shown by the formula.

When arsenous acid and potassium acetate are distilled together, an oil with a disgusting odor is obtained, which is known as Cadet's liquid. This contains a little cacodyl (dimethylarsin) $As_2(CH_3)_4$ and much cacodyl oxid, $As_2(CH_3)_4O$, both oily liquids. The word "cacodyl" is derived from a Greek word meaning *stinking*. Sodium cacodylate has no odor, though after prolonged administration or as a result of single large doses, a garlic-like odor is noticed from the breath, due to the formation of cacodylic oxid.

When treated with mercuric oxid, both oils are oxidized gradually to cacodylic acid. This acid forms odorless prisms, easily soluble in water. The acid is monobasic. Sodium cacodylate was introduced in 1899 by Gautier. The writer started to use it about 1900.

*Administration*: Sodium cacodylate is administered by the mouth, per rectum, intramuscularly, hypodermatically and intervenously. However, it may undergo chemical changes when given by the stomach or the rectum and have toxic effects, due to the rapid liberation of arsenic. When administered intravenously, it should be given in a somewhat more conservative dose than when administered hypodermatically.

When given by the latter route, which is for most purposes the best, the drug is practically non-toxic. When it is used to destroy parasites, larval or otherwise, existing in the blood, it should be administered intravenously.

It contains, as already noted, arsenic in a complex organic group and very high proportion, but liberates the active arsenic ion in the body very slowly. It is eliminated in the urine as arsenates.

*Dosage*: Hypodermatically; horse, one-half to two drams; cattle, same (considering difference in weight); dogs, one to three grains. For a horse of average weight (1,300 lbs.), my customary dose is forty-five grains dissolved in one ounce of distilled water and repeated every three days if necessary in acute affections. In chronic conditions, I give one dram repeated every five days. One ounce of water will also do for dissolving a one-dram dose, though occasionally in a debilitated patient, this concentration will cause a slight edematous swelling, which is of no consequence. Abscess formation as a result of the drug diluted as above mentioned, never occurs.

It should be administered in sterile solution and the solution always should be made up fresh. Asceptic precautions should prevail. the same as if a biological product was being used.

For canine practice ampules of the drug in solution as prepared for human use are most convenient. These can be obtained in dosage of three-fourths grain, one and one-half, three, five and seven and one-half grains.

For horses, several pharmaceutical houses are now preparing to put up the drug also in ampules of various dosage. The writer advises that a 45-grain ampule will be most convenient because most frequently used and be less expensive than to use two or more ampules of lesser dosage. However, the drug dissolves readily, and by using sterile distilled water, one can make his own solutions and save about fifty per cent of the cost in ampules.

The garlic odor above mentioned is not a sign of toxicity. However, should diarrhea manifest itself, this should be taken as a danger signal and the administration of the drug suspended for about a week. When if a continuance of the treatment is necessary, the dose must be decreased.

It is the safest by far of this complex class of arsenical preparations and an agent that

is destined to come into more and more general use as its broad therapeutic value becomes known.

*Physiological actions*: The action of sodium cacodylate is similar to that of other arsenic compounds, but it is much less toxic than the ordinary preparations or other complex compounds of arsenic and is also less apt to cause undesirable side effects. This superiority is due to the *slow liberation* of the arsenous acid in the organism. The action is thus more gradual and less toxic.

It is an alterative, modifying nutrition, hematinic, a special tonic to the skin, the respiratory apparatus, and clinically it clearly demonstrates a blood antiseptic property to such an extent that I look upon it virtually as a "chemical antitoxin."

It stimulates the central nervous system to a powerful degree, resulting in an increased appetite, better action of the emunctories and a condition of exhilaration so important in diseases of depression.

In certain forms of anemia it increases the number of erythrocytes, which it accomplishes by stimulating the bone marrow.

It also causes a dilation of the capillaries and an increase of leucoblastic (not erythroblastic) cells. The dilation of the capillaries, I believe, accounts in a large measure for the general systemic improvement under arsenic.

Arsenic compounds cause an increase in nitrogen metabolism and a deposition of fat and an increased strength of bones. The nutrition of the skin is especially improved by it.

It is excreted by all the excretions—urine, feces, milk and sweat. The excretion begins in two to eight hours and lasts for three to ten days after a single dose, to seventy days when it has been given continuously.

*Therapy*: Sodium cacodylate is of the greatest value to improve nutrition in various cachetic conditions and to increase resistance to various diseases, such as the influenza group of diseases in horses, pneumonia, malarial type of fevers, joint infection as a sequelac to influenza, chronic rheumatism; as a tonic, etc.

In *influenza* of the severe but not dangerously complicated type, the horse is usually well in three days; rarely does it require over five days. For this ailment, I administer a 45-grain dose hypodermatically and repeat in three days if the temperature has not steadily declined and the patient shows a rapid improvement. No oral or collateral treatment is required though I occasionally prescribe one or one and one-half dram doses of nux vomica every three hours, or sometimes two-dram doses every four hours, always diluted with four to eight parts of water.

In *chronic influenza* or in that type that takes on a malarial phase with intermittent or remittent fever, the drug is quickly specific. For this, I usually give one-dram doses.

When *lameness* affecting various joints occurs concomitant with, or as it usually occurs, following an attack of influenza, the drug has proved most reliable in my hands.

In *chronic rheumatism* (probably due to influenza infection but with no history of same), I have had horses make perfect recovery even after they had become useless and greatly emaciated.

In *chronic skin diseases* of different kinds, the results from the drug have been most gratifying, and I have had successful results when such cases have resisted a multitude of other lines of treatment for weeks, and in some cases for months, and the response is usually procured during two or three weeks' treatment.

In *pneumonia*, there is no doubt as to the value of the drug, though in these cases, I use collateral treatment such as the usual counter-irritant treament and perhaps the oral administration of the following:

℞—Camphorae pulv. ..... ℥jss
Ammon. chlorid (or carb.) pulv.
Potas. nitratis pulv. ..... aa ℥iij
Nucis vom. pulv. ..... ℥jss
Misce ct. ft. chart No. XII
Sig. One powder every three hours (in form of an electuary).

In *strangles*, if the case is gotten promptly, the drug proves of value, oftentimes aborting suppuration.

For *worms* or other types of parasites infesting the blood stream or circulatory apparatus, many favorable reports have come to my notice. For this it should be administered intravenously. It should be of value in diseases produced by protozoa (piroplasmosis) in all animals.

I have had most promising results in several cases of *canine typhus* (black tongue) of dogs. However, when hook worms were present, I gave them thymol in addition; but the cure was not due to this latter drug as I had tried it alone in a number of cases which died. I have had recoveries in severe attacks by using sodium cacodylate alone.

In *canine distemper*, I have not had satisfactory results from it.

As a *general tonic*, the results are most satisfactory when about forty grains are given every three or four days (for a horse; in proportionate doses for other animals).

In *anemia* it acts most satisfactorily, but in a few cases iron should also be given, when the two drugs in conjunction seem to be highly synergistic to each other.

In *chorea* I prefer constantly increasing doses of Fowler's solution of arsenic, although it is probable that if we could exhibit the sodium cacodylate in small daily increasing doses, results might be at least equally good, or better; but unfortunately, the patient (usually the dog) does not remain sufficiently long in our care to give a fair test.

I have had a large number of favorable reports as to the curative value of the agent in *swamp fever* when these cases were treated sufficiently early to expect response from any therapeutic measures.

It should be tried in *dourine*.

In *hemorrhagic septicemia* of both cattle and horses, Dr. J. L. McEwan of Frankfort, Illinois, reported to me marvellously satisfactory results from giving it to calves (age not stated in his letter) 30 grains at a dose and giving only two doses four days apart. To the horses he gave the dosage as already mentioned and stated that they made prompt recoveries, even though some were down and unable to rise. He had no losses after the treatment, and only two to three doses were given. The correct diagnosis in this outbreak was verified both by autopsy and in the laboratory in the case of those animals that had died previous to his administration of sodium cacodylate.

In human practice it has cured chronic malarial fever of several years' standing which had resisted quinin and other treatments.

It replaces quinin entirely in my practice as it does all and more than quinin does and is much cheaper, even when that drug is normal in price.

The doses mentioned in the therapeutic suggestions, unless otherwise specified, are for the horse and administered hypodermatically.

In closing, let me advise first, that you thoroughly try out sodium cacodylate in your practice; second, that when other lines of treatment fail, try it; and third, when you don't know what else to do, give sodium cacodylate.

# The Whorled Milkweed*

## (Asclepias Verticillata)

By GEO. H. GLOVER, D. V. M., Ft. Collins, Colorado

CLIMATIC and other conditions prevailing in the semi-arid states are extremely favorable for the live stock industry. Unhampered by frequent visitations of animal scourges, the infrequency of severe storms, water from the pure mountain streams and the most nutritious of native grasses, the live stock business under range conditions, is a comparatively safe, and generally a profitable business.

The open range conditions largely prevail in the mountainous districts, and the summer grazing and winter feeding of live stock represents an industry that is destined to be permanent in these states.

Of the untoward conditions which hamper this industry in Colorado, that of poisonous plants has the greatest economic significance.

According to the last census report, the total valuation of live stock in Colorado was $132,660,000. Figuring the usual loss from preventable diseases at five per cent we have the astonishing figure of $6,600,000, of which $1,500,000 can safely be attributed to poisonous plants.

The value of the animals actually killed by eating poisonous plants does not nearly represent the aggregate loss to the range stockmen. There is the loss of a few animals, which is the common experience, and the injury to many; the failure to breed and put on flesh, a protracted condition of unthriftiness, which may or may not be followed by cachexia and death. Poisonous plants are often aggressive in the struggle for possession of the land, thus supplanting the native grasses. Again many otherwise valuable ranges are depreciated in value almost one hundred per cent because of being infested with poisonous plants.

A considerable proportion of the practice of the western veterinarian has to do with cases of poisoning and most of this occasioned by less than a dozen well known poison weeds, and no doubt a few more that are as yet unsuspected or merely classed as suspicious. Every practicing veterinarian should be able to identify these plants and should be familiar with the symptoms of poisoning which they produce.

The poisonous plants found growing on the mountains and plains of Colorado, named in the order of their supposed economic importance are as follows: Varieties of "loco" weeds (Argalli and Astragali), larkspur (Delphinium), water hemlock (Cicuta), death camas (Zygadenus),

* Read at the Colorado Veterinary Medical Association Meeting, January 17, 1917.

monkshood (Aconitum), wild bean (Lupinus). These have constituted a group that have been looked upon as the principal poisonous plants of Colorado. In a secondary group we may place: The prussic acid poisoning group; cane, kafir corn, Johnson grass, cherry and others; white hellebore (Veratrum), poison oak (Rhus), swamp laurel (Kalmia), night shade (Solanium), sneezeweed (Helenium and Duagaldia), scouring rush (Equisetum), and ergot (Claviceps). There are a few others that have been looked upon with suspicion, such as brake-fern (Pteridium), scrub oak (Quercus), greasewood (Sarcobatus), cow cockle (Saponaria), buckbean (Thermopsis), snow-on-the-mountain (Euphorbia), false mallow (Malvastrum), dogbane (Apocynum), black henbane (Hyoscyamus), jimson weed (Datura), sage (Artemisis), cocklebur (Xanthium), and milkweed (Asclepias). Some of the last group are known to be poisonous but have very little practical significance as poisonous plants.

It is not my intention to discuss at this time the condition under which animals are poisoned, but rather to consider the one particular poisonous plant under consideration, and briefly its congeners.

### Milkweed (Asclepias).

The milkweeds, as a group are quite well known. All of them are regarded with suspicion by stockmen, and in some cases at least, this suspicion is justified. All plants with a milky juice are not "milkweeds," that is, of the group known botanically as "Asclepias." For example, prickly lettuce, sow thistle, and prickly poppy all have a milky juice, yet are not true milkweeds. The three above mentioned have alternate leaves, while the true milkweeds have opposite leaves.

There are many species of true milkweeds within our borders. All are herbs, with opposite leaves (rarely alternate), or sometimes several at a joint on the stem. The leaves and stems are often somewhat woolly, sometimes smooth. The flowers are in umbels, pink, purplish, or white in color, and peculiar in shape. The fruit is a pod which splits open at maturity allowing numerous seeds to come out, each of which has a silky tuft of hairs at the end.

The most common milkweed in our section is the showy milkweed (Asclepias speciosa). It is perennial two to five feet high with large, opposite leaves, and purplish flowers in spherical, terminal clusters. It grows in good, rather moist soil on plains and in foothills throughout the state.

The low milkweed (Asclepias pumila), is two to fifteen inches tall, and grows from a woody root. The leaves are very narrow and crowded on the stem. The pods are long, slender and much smaller than those in the preceding species. It prefers dry, sandy soil. It is most common at low altitudes.

The whorled milkweed (Asclepias verticillata), is a leafy plant, one to two and one-half feet high. The long, narrow leaves are several at a joint of the stem. It grows on dry plains.

There are several so-called green milkweeds in Colorado, the chief one being the green-flowered milkweed (Acerates viridiflora). It is a plains plant.

Many of these plants have an acrid juice. The showy milkweed is said to be poisonous. It contains asclepion.

### The Whorled Milkweed

The whorled milkweed (Asclepias verticillata), sometimes called green milkweed, grows extensively along river bottoms and native meadows of Colorado. It is frequently seen growing luxuriantly on ditch banks. All of the reported cases of supposed poisoning from the whorled milkweed have come from the southwestern portion of the state. In turning to my files, I find the following report, that was made on this plant more than a year ago:

### Test of Toxic Properties of Green Milkweed

### (Asclepias Verticillata)

Received from Olathe, Colorado, Sept. 14, 1915.

Sept. 26. Three rabbits were placed in a pen and fed nothing but milkweed, after being kept in said pen for three days it was found that they refused to eat the plant and were returned to normal food.

Sept. 19. Eighteen grams of leaves and stems broken into fragments were placed in each of three different flasks, to which were added, to first 500 cc. of water containing five-tenths of one per cent hydrochloric acid, 500 cc. alcohol, was added to the second and the same amount of glycerin to the third.

Sept. 23. Filtered contents of three flasks mentioned above. Evaporated the filtrate of the flasks to which alcohol and water had been added, from 500 to 100 cc.

Sept. 28. Cave rabbit in pen No. 15, 5 cc. of alcoholic extract subcutaneously. Rabbit in pen No. 14, 5 cc. of water extract subcutaneously. Rabbit in pen No. 17, 10 cc. of glycerin extract by the mouth. Rabbit in pen No. 16, 10 cc. of water extract by the mouth. These rabbits were given this amount at about 2:30 o'clock in the afternoon.

(*Continued on page* 338)

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# The United States at War

WE have no selfish ends to serve. We desire no conquest, no dominion. We seek no indemnities for ourselves, no material compensation for the sacrifices we shall freely make.

We are but one of the champions of the rights of mankind. We shall be satisfied when those rights have been made as secure as the faith and the freedom of the nations can make them.

But the right is more precious than peace and we shall fight for the things which we have always carried nearest our hearts—for democracy—for the right of those who submit to authority to have a voice in their own governments, for the rights and liberties of small nations, for a universal dominion of right by such a concert of free peoples as shall bring peace and safety to all nations and make the world itself at last free.

* * * To such a task we can dedicate our lives and our fortunes, everything that we are and everything that we have, with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principles that gave her birth and happiness and the peace which she has treasured.

God helping her, she can do no other.—*President Wilson.*

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In never-to-be-forgotten language you have made yourself, before the universe, the eloquent interpreter of outraged laws and a menaced civilization. —*President Poincare.*

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"America thus remains faithful to the traditions of the founders of her independence and demonstrates that the prodigious expansion of her industrial forces and her economic and financial power has not dimmed those ideals without which a nation can not be truly great.—*Premier Ribot.*

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"America has at one bound become a world power in a sense she never was before. She waited until she found a cause worthy of her traditions. The American people held back until they were fully convinced that the fight was

**not a sordid scrimmage for power and possessions, but an unselfish struggle to overthrow a sinister conspiracy against human liberty and human rights.**
*—Premier Lloyd George.*

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"The vast moral effect of the accession of the United States to the cause of the allies is so immense that it can no more be estimated today than the ultimate result of the revolution in Russia can be foretold. * * * The practical effect may be more easily measured. It insures victory for the allies."—*London Morning Post.*

"In the words of M. Ribot, the French premier, it is something of vaster import than a mere political event, but as a poltical event its importance is unparalleled in the whole history of the world and renders immortal the presidency of Wilson.—*London Daily Mail.*

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**With malice toward none, with charity for all, with firmness in the right as God gives us to see the right, let us strive on to finish the work we are in.**
*—Abraham Lincoln.*

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# War and Veterinarians

THE question that arises in every veterinarian's mind as our country is unavoidably swept into the world war, is, "How can I best serve my country?" This question can be answered in a single sentence by saying—Each man best serves his country by filling the position for which he is best trained.

Wars are no longer fought by armies alone but by whole nations. All citizens must contribute their efforts and a multitude of industries must be reorganized and readjusted to war conditions. Thanks to our navy which is ready for the work that is before it and to the navies of the Allies, it appears we shall have time to raise and equip an army and to build the necessary ships to transport and supply it. With the splendid industrial organization of the nation and its inexhaustible resources, no doubts need be entertained that the American army will have the necessary guns, munitions, clothing and food and in any case veterinarians are not trained for this work. But the workers at home must be fed and Great Britain, France and Italy must be fed in part by the agricultural industry of this country, and our agricultural industry is poorly organized. Not only is it one of the gravest problems of the war, but it is the one in which veterinarians can assist most. In the words of President Wilson, "The supreme need of our nation and of the nations with which we are co-operating is an abundance of supplies, and especially of food stuffs . . . Upon the farmers of this country, therefore, in large measure rests the fate of the war and the fate of the nations."

The problems of veterinarians who are accepted for military service will, of course, be onerous, but their work will be according to well laid plans of experts in military science, and that it will be creditably done there is no doubt. It is to the veterinarian who must remain in civil life and do his bit in conserving and increasing the food supply that we would first address ourselves. Upon him also devolves patriotic duties of a high order.

The losses to the live stock industry from disease and exposure are incalculable and are in large part preventable. Let us make it our business to prevent this loss as far as possible; not as in the past only when employed to do so, but on every occasion. Whether or no we are directly remunerated for it, let us not hesitate to supply to our clients and to all others that we can reach, any and all information and help that will lessen the whole country's loss in food products and in horses direly needed both in agriculture and in armies.

The losses from plant poisoning and from forage poisoning amounts to millions upon millions of dollars and is nearly all preventable; let us do our part and more in preventing this.

The losses in live stock breeding both from disease and from wasteful methods are of the greatest importance to the live stock industry and to the whole country.

We have published many articles recently on contagious abortion, the care of the stallion and artificial impregnation, and more will follow. Study this subject carefully with a view to freely lending every aid possible to breeders in your respective communities.

The number of people that are engaged

in the raising of cattle, swine, sheep and poultry must be greatly increased. The number of premises on which a few of these animals may be reared and on which they are not now found is vast. Help to organize sheep clubs, calf clubs, pig clubs and poultry clubs among the boys and girls of your respective communities and do it now. Dignify these activities by a community interest and thus popularize them. Give your services as expert director. The family that produces its own meat releases enough of the general supply to supply another family, a vital matter when it is multiplied by hundreds of thousands as it should be, and must be, if the "supreme need" of the country is to be met.

Americans are more wasteful than any other people in the world. This national habit in the stress of war is a national calamity. Do your part by precept and example to prevent it as it occurs in animals and animal food products. The veterinarian who is not informed on the proper methods of feeding has no time to read the baseball news until he overcomes this deficiency. Improve the feeding of animals in your communities and methods of marketing them. The loss due to the fertilization of market eggs constitutes one-third of the vast loss that results from all improper methods of producing and marketing eggs. The feed that is converted into energy expended in pure deviltry by the cockerel would produce no inconsiderable amount of food if fed to capons, to cite seemingly trivial examples of waste. Veterinarians cannot keep the male birds from the hens nor caponize very many cockerels, but they can teach the poultry raisers of their communities to do both and thus contribute to supplying the "supreme need" of the Allies, which is more food.

For those permitted to serve with the armies in the field, we give detailed information in the Queries and Answers Department of this issue, regarding the organization of the army veterinary corps of the regular army and questions which show the scope of matters on which the board of examiners deems it necessary for veterinarians to be informed. It is hoped that the veterinary corps of the new army to be enlisted this summer will be organized upon the same plan.

Next month we shall give a detailed account of how horses have been bought, cared for, and transported for the French army with particular regard for the important duties of the veterinarians engaged in this work.

And with all this advice that we may profitably give to others, let us take a little to ourselves. War is the most technical game in the world. The United States has spent millions of dollars to train experts in the art of war and has committed our fate in this war to their charge. Let us have no part with, but rather discourage as far as possible, "soap box experts" who will have ready theories for raising and equipping an army, for conducting campaigns and managing the nation in time of war. Let us leave that to experts in the art of war. Experts say that voluntary enlistment is wasteful and has proved a failure in this and other wars. Far be it from us to attempt to interfere in the plans of these experts. Men with many years' training in the American and other armies and experience in actual warfare say that it takes a year in which to prepare an army for work in the field. Let us accept their dictum in this and other purely military matters. A modern war is the most highly specialized business ever conceived, in its management there is no place for the "corner grocery strategist."

# Bulletins Every Veterinarian Should Have

### Breeds of Swine

By F. G. Ashbrook, Animal Husbandry Division, Bureau of Animal Industry, Farmers' Bulletin 765, United States Department of Agriculture, Washington, D. C.

The various breeds of swine, their origin, general appearance, development and adaptability, are considered in this bulletin. Swine are divided into two general types, the lard and the bacon types. In the United States the lard type greatly exceeds the bacon type in the number of hogs raised. The principal breeds of the lard type are mentioned as the Poland China, Berkshire, Chester White, Duroc Jersey and Hampshire, while the most important breeds of the bacon type are given as the Tamworth and the Large Yorkshire. It is stated that there is no best breeds of swine, some breeds being superior to others in certain respects, and one breed may be better adapted than another to certain local conditions. The pamphlet contains fourteen illustrations showing typical specimens of different breeds.

### The Domesticated Silver Fox

By Ned Dearborn, Assistant Biologist, Bureau of Biological Survey, Farmers'

Bulletin 795, United States Department of Agriculture, Washington, D. C.

Fox farming, which has lately attracted wide notice, is treated in a somewhat exhaustive manner in this brochure. The development of silver fox farming, the precautions to be taken with breeding animals and in sickness and health, the construction of inclosures and nesting dens, the expenses of the business as well as its profits, and how and where fox farming may be successfully carried out, are some of the points considered. The distinction between red, cross, silver and black foxes is explained and the relative values of the pelts discussed. The areas suitable for fox farming are given as Canada, the extreme northern states of the United States, and parts of the New England and western states. Cool climates have been found to be the most favorable. The natural food habits of foxes are similar to those of dogs. The diseases to be guarded against especially in the young are also very much the same as found in dogs—indigestion, rabies, mange, infestation with intestinal parasites, as well as lice and fleas. It is stated that thus far no widespread disease among foxes has appeared and that among domesticated foxes no case of rabies has been known. The author mentions that misleading statements have been made and erroneous impressions gained in regard to the profits yielded by this new industry, but adds that the business may well be considered to be a profitable one if rightly conducted and under the proper conditions. Quotations during January for the 12 years from 1905 to 1916 for first-grade silver fox skins are said to have averaged about $600 each. The sale of breeding stock is also an important feature. The expense incurred in properly caring for a pair of silver foxes is estimated at $90 a year.

## THE FUNCTION OF LIVE STOCK IN AGRICULTURE

By George M. Rommel, Animal Husbandry Division, Bulletin 694, Bureau of Animal Industry, Washington, D. C.

The part that live stock plays in agriculture is discussed in this paper, which was originally presented at a meeting of the Second Pan-American Scientific Congress. It is pointed out that the animal industry is the most important branch of the agriculture of the United States, its annual production amounting to two and three-quarters billions of dollars. The function of live stock in agriculture is classified into seven divisions; namely, *maintenance of soil fertility*, which is held to be the most important; *the manufacturing function*, under which term is considered the ability of live stock to convert raw materials into meat and dairy products; *motive power*, which has reference to horses used on farms; *the principal source of income*, which includes those forms of animal industry where live stock is the money crop of the farm, such as dairying, breeding of purebred animals, etc.; *increasing the interest in and the attractiveness of farm life*, under which heading is mentioned the love of children for animals as an important element in the development of their interest in poultry, pig and calf clubs, thus extending the future agricultural growth of the nation; *improving the method, system and business organization of the farm*, which is greatly influenced by the raising of live stock since animals need methodical care and efficiency of labor is required in order to be successful in this branch of farming; and finally *the improvement of the diet*, which takes into account the necessity of animals products forming a part of the human diet and also the possibility of reducing living expenses by keeping live stock.

## Correct Payment for Cheese Factory Milk By the Babcock Test

By J. L. Sammis, Madison, Wis., Bulletin 276, Agricultural Experiment Station, University of Wisconsin. In this pamphlet the author discusses the different methods of payment for milk at cheese factories and concludes that the pooling system should be discarded in favor of the fat test as a basis of payment. In 15,000 factories covered by this report, the straight fat test method gave satisfactory payments in ninety-five per cent of the cases. However, in places where herds of widely differing breeds are kept and there is more than a one per cent difference in fat between the highest and lowest tests in the same month, the "fat plus six-tenths system" is recommended.

## Work of the Experiment Station and Agricultural Extension Service for 1916

By H. L. Russell, Madison, Wis. Director's Annual Report, Bulletin 275, Agricultural Experiment Station, University of Wisconsin, Madison, Wis. A very interesting resume of the work done at the station during 1916 is contained in this brochure. The experiments by the department of agricultural chemistry were of especial importance in showing that in addition to the common classes of nutrients —proteins, carbohydrates and mineral matter—certain other substances must be sup-

plied in the food before growth can occur. The exact nature of these substances has not been determined, but some of their sources in foods are milk and dairy products, eggs and meat. One class of this material is soluble in fats and is called "fat-soluble A." The cereal grains probably all contain less of this essential than milk and eggs, and it is lacking in plant oils and fats. Thus the conclusion is drawn that butter fat has a food value not possessed by the fats of plants used for human food as substitutes for butter fat. However, this unknown element necessary to animal growth seems to be present in alfalfa hay and probably other leafy portions of plants, which explains the ability of herbivora to grow on a vegetarian diet, while pigs fed grains alone do not thrive on any combination so far tested. When animals have reached their growth, they do not seem to need any large amount of "fat-soluble A" for their own bodies. Thus, even if the food of a cow contains but relatively little of this substance, she is apparently able to concentrate the amount into her milk and produce a nourishing food for her calf.

The other class of diet necessities are soluble in water and have been called "water-soluble B." These are needed for growth and also for maintaining grown animals and are widely distributed in the vegetable food stuffs, as well as in meat, eggs and milk, but they are not present in starch, refined sugar, the plant fats, and polished rice. A deficiency of this substance in the diet of people who subsist largely on polished rice, is accountable for the disease of beri-beri.

The bad effects of excessive wheat feeding were also demonstrated by various experiments, and the inference is made that wheat embryo contains a distinct toxic substance, the chemical nature of which is as yet unknown. Cattle and swine restricted to a wheat ration lost weight and displayed other symptoms of the injurious effect of such a diet. Cows when so fed did not produce normal calves, their offspring being born blind or weak. However, feeding wheat exclusively to poultry did not appear to have any detrimental effect on them, and it is believed that in some manner chickens are able to overcome the toxic effect of the wheat embryo.

Several experiments in the feeding of different rations to dairy heifers, work horses, hogs and sheep, are reviewed. A study of the influence of close inbreeding of fowls was made, with the resulting conclusion that the eggs of inbred fowls are greatly reduced in hatching power, while their chicks are late in hatching, deficient in vitality and in many cases fail to come to maturity.

A wide range of experiments with soils, forage crops and cereals is recorded; also the results of investigations into various plant diseases.

Tuberculosis of fowls was found to be more prevalent than it is perhaps generally held to be, and the communicability of the disease to swine by inoculation of pure cultures of the avian organism was demonstrated. In every case the hog died, but no definite tubercles could be seen with the naked eye, the changes in the lungs resembling those found in pneumonia. The opinion is expressed that it is doubtful whether the avian tubercle would be able to produce a fatal termination of the disease in hogs when they are infected by natural methods, as by feeding. The "wattle" test where avian tuberculin is injected, is stated to be a reliable means of detecting the disease in fowls. In one flock 131 out of 135 hens were found to be diseased. Further study is urged with a view to perfecting methods of eradication and ascertaining the possibility of eggs serving to transmit the disease.

An interesting fact was brought out in the work of the department of bacteriology; namely, that different spices such as cinnamon, cloves and allspice, possess considerable antiseptic properties, their arresting effect on the growth of molds and bacteria being due to the essential oils they contain. Molds were found to be more sensitive to their action than bacteria.

During the year 77,500 doses of tuberculin were produced in the laboratories and 634,000 cc. of anti-hog-cholera serum. Hog cholera is said to be on the decline throughout the state. The laboratories have also examined 1,472 blood samples by the complement fixation test with a view to determining the presence of contagious abortion, and in 28 per cent of the cases positive reactions were obtained. Diseased animals or carcass parts to the number of 193 were examined for veterinarians to assist them in making diagnoses in various cases.

Agricultural extension activities in cooperation with the United States Department of Agriculture are fully described, ranging from stump pulling to lectures on rural hygiene. The report constitutes a creditable showing for the experiment station, and veterinarians would do well to peruse it.

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### Use of Hog Cholera Globulin on Three Thousand Hogs

By Robert Graham, Lexington, Ky.

This is a reprint from the September, 1916, number of the American Journal of Veterinary Medicine.

### Tuberculosis of Hogs

By John R. Mohler, Assistant Chief, Bureau of Animal Industry, and Henry J. Washburn, Senior Bacteriologist, Pathological Division, Washington, D. C., Farmers' Bulletin 781, U. S. Department of Agriculture. This bulletin is intended for the information and assistance of hog-raisers in combating tuberculosis among hogs. It is stated that while tuberculosis in the human family has been lessening during the past fifteen years, reports from meat-packing centers fail to show the same encouraging condition regarding tuberculosis in hogs. The principal methods of infection are through milk of tuberculous cows, by feces of cattle through feeding on tuberculous carcasses or slaughter-house offal, from feeding uncooked garbage, by tuberculous attendants, tuberculous fowls, etc. The belief, however, that tankage fed to hogs is responsible for the increase in tuberculosis among them, is held to be without foundation, and tankage is recommended as a safe and valuable food in raising and fattening swine. The tuberculin test, lesions and preventive measures, are briefly, but adequately considered. The importance of spreading information among farmers and dairymen is emphasized, and veterinarians are specified as the best equipped to carry on this education.

Hog raisers are advised to scald all raw products returned from the creamery; have their cattle tested with tuberculin if a hand separator is used on the farm, or, in the absence of such a test, to scald the skimmed milk; let the hogs feed behind healthy cattle only, or those which have passed the tuberculin test; feed carcasses of animals that have died from any cause, or offal from the slaughter-house, or garbage of any character, only after the meat, offal, or garbage has been thoroughly cooked.

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### Annual Report of the Camel Specialist

By H. E. Cross, I. C. V. D., M. R. C. V. S., D. V. H., A. Sc., Punjab, India.

The report covers the year 1915-16, and during this time the camel specialist traveled 5,704 miles by rail and 2,445 miles by road in carrying on his work, investigating outbreaks of disease among military camels and treating animals belonging to private owners. It appears that surra is the most serious disease among camels, the report of one camel corps showing out of a mortality of 2,470 from fifty different causes, 1,325 deaths attributed to surra. Since surra is spread from camel to camel by blood-sucking flies, experiments were made with various fly-repellents, including creosol emulsion, Jensen's emulsion, citronella oil, aniseed oil, cod liver oil and castor oil. The conclusions drawn were that the results obtained depend to a great extent upon whether the flies are very hungry or not. A variety of drugs were tried in the treatment of the disease, but only arsenic and its derivatives gave any satisfactory results. Experiments with garlic juice and decoctions of the leaves of wild olive are being carried out. That ponies may contract surra from camels was demonstrated by the specialist. While goats and sheep may also get the disease, according to the experiments described in this report, the malady runs a mild course in these animals compared with the pony, where it proves fatal. It is stated also that camels suffer a great deal from articular rheumatism, but no cases of muscular rheumatism have been observed. In some parts of the Punjab a disease known as wail is common, the principal symptom of which is loss of control of the hind legs. Other diseases prevalent among camels are sore throat and jhooling, the symptom of the latter being a hot, hard and painful swelling usually on the neck or hind quarters or on the testicle, although the lesion may occur in almost any part of the body. The swelling becomes irritating and the camel will gnaw at it, leaving a raw wound. Suppuration finally takes place and the wound heals, leaving a small white spot, which lasts for several months. Experiments carried out showed that camels are as susceptible as cattle to black quarter, but are not susceptible to hemorrhagic septicemia. The specialist was told by camel men, and it has usually been stated that butter cannot be made from camel's milk. He decided to ascertain the matter for himself and found that butter can be made from the milk, but the churning takes four times as long as with cow's milk. The report is very interesting, indicates much painstaking work and reflects credit on the camel specialist.

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### A Farmer's Poultry House

Circular 62, College of Agriculture, University of Wisconsin, Madison, Wis. This folder illustrates a practical poultry house for 125 hens, which can be built at a cost of $90.00 for the lumber.

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A new law designed to combat tuberculosis in cattle has been passed by the Iowa state legislature, to go into effect after July 1, 1920. It provides for herds of dairy cattle to be tested every two years, and milk from untested herds will be prohibited from being sold and the animals may not be sold for breeding purposes. Cattle found to be infected with tuberculosis become the property of the state and will be slaughtered, the owners receiving indemnity for their value.

# Department of Surgery

By L. A. MERILLAT, Chicago,
Professor of Surgery in the McKillip Veterinary College

## The Modern Treatment of Infected Wounds

I DOUBT if there is any condition of domestic animals that has been, and in fact is today, handled with as little regard for available scientific facts as infected wounds. In order to understand the treatment of infected wounds as it should be done at this age, this day, and in fact at this moment, a little history of wound treatment will not come amiss.

In reviewing wound treatment during all epochs we find medical history divided into three periods; the first is the period from Hippocrates to Pare, in the 16th century; the second is from Pare to Lister who achieved greatness in the 19th century and who has just recently died, the third is the period from Lister to Dakin, or more properly speaking Dakin and Carrel, whose researches and experimentations began to revolutionize the management of infected wounds beginning with 1915.

### The History of Wound Treatment

Analyzing the character of wound treatment in each of these periods we find that during the four centuries preceding the Christian era, and then through the middle ages, until the dawn of modern civilization it was customary to treat all serious infected wounds with such harsh measures as the application of burning oils, caustic acids and hot irons. This treatment was the accepted form of the medical profession until the famous French surgeon Ambrose Pare, who served four kings of France successively as chief surgeon of the French army from 1537 to 1590. Pare is credited today in medical history as being the father of a modified wound treatment which consisted of the application of vegetable substances and their extracts, and occasionally inorganic compounds much weaker than the harsh method used in the first period. This was really the beginning of antiseptic treatment of wounds, because all of the substances used by Pare were antiseptic in action. Some of them are used today. Strange to say there was very little improvement made in the treatment of wounds from the days of Pare until about the year 1867, when Sir Joseph Lister laid down the postulates which governed the management of wounds in the medical profession and then until 1915, when Dakin's remarkable discovery came as another revolutionary step. Thus we find that the earlier surgeons destroyed the bacteria in wounds with strong microbicides; Pare with milder antiseptics; Lister by preventing their entrance into the wounds; and now Dakin by creating conditions under which bacteria cannot grow.

### Bacteriology Pointed the Way

Since the science of bacteriology which has developed during the last four decades has demonstrated the cause of wound diseases, wound treatment immediately divided itself into two efforts, the one laid down by Lister: to prevent the intrusion of microorganisms, and the other the various efforts we have made to destroy organisms which have already gained a foothold in the tissues. The preventive treatment of Lister constitutes the modern aseptic surgery, that all surgeons now sacredly respect. They have respected it more in the past because of the known difficulty of dislodging, modifying or controlling infection once it had taken root. In short it has been known to the modern school of surgery that a wound seething with pathogenic microorganisms is an exceedingly difficult condition to manage because bacteria are more viable than the cells of the body. That is to say, there was no known agent that could be applied locally to an infected wound with any satisfactory results because if the bacteria were killed by the agent the tissues would likewise be destroyed or at least so badly devitalized that they actually produce more

food for the bacteria. During all of these years attempts have been made to find some agent that would destroy bacteria and at the same time not harm the formative tissues, but there was no progress made in this direction until Dakin and Carrel demonstrated the efficacy of the hypochlorites now being exploited under the name of Dakin's solution or of chlorazene.

**Dakin Refined a Known Preparation**

Chlorazene is a commercial product accepted by the Council of Pharmacy and Chemistry, as a new and non-official drug. It is a solid, soluble in water, designed to take the place of Dakin's solution, a product which is difficult to make and at the same time very unstable, retaining its medicinal properties only for a few hours. Dakin does not claim priority in these investigations and experiments, admitting that Javel and Labarraque used the same compound before him. It is, however, due to Dakin and especially Carrel that this substance was reduced to a state of refinement and chemical accuracy upon which its universal curative properties depend.

**Dakin's Solution a Blessing to Maimed Soldiers**

The terrible wounds resulting from the ordnance of modern warfare have created a demand for a better wound treatment, and Dakin's fluid seems to have supplied this demand, coming as a blessing to the hordes of wounded soldiers in the great European war.

The following quotations come direct from Dr. Carrel, Hopital, Temporairè 21, Rond-Royal, Compiègne, France:

**Dakin's Solution.**

The Dakin-Carrel fluid contains the following chemicals, and in these proportions:

Chlorinated lime, 200 grams.

Anhydrous sodium carbonate, 100 grams.

Sodium bicarbonate, 80 grams.

These are dissolved in accordance with special directions in ten liters of water. Chlorinated lime, a very unstable product, should be mixed first with five liters of water. The anhydrous sodium carbonate and the sodium bicarbonate are likewise mixed in another five liters of water. These two solutions are mixed, agitated thoroughly and then allowed to remain in contact thirty minutes. When a precipitate occurs the clear supernatant fluid is siphoned off and filtered. This is the Dakin-Carrel fluid. The making of this fluid is a very tedious process and is liable to miscarry in that it may not contain the proper chlorin content and may contain alkalies. Titrations (volumetric analysis) to demonstrate its chlorin content are necessary because it is such a very unstable product. The sodium carbonate and the sodium bicarbonate are more stable compounds. It is also necessary to titrate the clear supernatant fluid so that it should not contain less than forty-five hundredths of one per cent or more than five-tenths of one per cent of sodium hypochlorite. If the solution is weaker than forty-five hundreths of one per cent it has no action, and herein is where failures with Dakin's solution occur. If stronger than five-tenths of one per cent it is too irritating and therefore harmful.

Dakin in the British Medical Journal (1915) while disclaiming originality for this fluid giving the credit to Labarraque, shows that the latter's solution, although essentially the same, was entirely too irritating and that the fault was found in fact that he did not titrate for the purity of the chlorinated lime and again that the end-product of his solution contained an irritating free alkali. The Dakin-Carrel fluid to-day must not contain any free alkali. This is determined by the addition of powdered phenolphthalein. If a red color appears in the fluid it has a free alkali and will require the addition of a two to four per cent solution of boric acid.

The finished fluid is again unstable, necessitating fresh mixtures and the tedious process of volumetric analysis over again.

**Improperly Made Dakin's Solution Harmful**

Stimson of New York (Jour. Am. Med. Ass'n, Dec. 2nd, 1916) mentions particularly the unsatisfactory results due to imperfections of the products made, especially in regards to alkalinity. He found that the patients of Carrel's hospital exhibited a nice, pink granulating surface, while in those of the other hospital, where less attention was paid to accuracy in making and testing, the wounds were discolored and less healthy looking.

The antiseptic properties of these products according to Dakin are due to the chemical union of this changed compound with the protein substance of the wounded tissues. The action on protein is that of forming a new compound—the radical NCl—a chloramide which is antiseptic. But its greatest action and the one upon which its remarkable merit depends is that of dissolving the devitalized elements and assisting in their expulsion from the wound. In short, the forming NCl and the hastening of the "self-amputation" of devitalized and non-viable elements, sums up in a word the beneficial effect of Dakin's fluid.

**A Simple Substitute for the Unstable Solution**

Chlorazene, which as above stated, is an accepted non-official drug and whose full chemical name is para-toluene-sodium-sulpho-

chloramide has about the same efficiency and antiseptic properties and has the advantage of being less irritating and more stable than the hypochlorite solution. See "Studies in Antiseptics," British Medical Journal, January 29, 1917.

### Technic of Its Application

Wounds to be treated with the Dakin-Carrel fluid should be classified as superficial and deep. The superficial wounds are dressed with successive layers of gauze, moistened every two hours with the fluid. If chlorazene is used it is applied in a one-half to one-percent solution on the layers of gauze. It must never be made too strong because when it irritates the effects are harmful. For deep wounds a dripping apparatus is essential. This consists of a jar to which a hose is attached and which leads to small, glass tubes, distributed here and there about the traumatic cavity. These tubes are usually sutured to the tissues so as to keep them in place. There is a stop cock to regulate the flow, which should be drop by drop. About one liter of the fluid should be thus dropped into the wound every three hours and care must be exercised to see that every part of the wound is brought into contact with the solution.

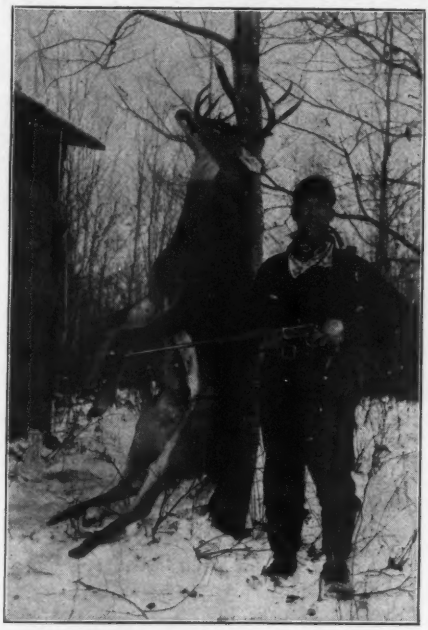
### Veterinarians Must Improve Their Wound Treatment

There is no doubt in my mind that the veterinarian today who wishes to keep up with the times must adopt this form of treatment for infected wounds, or wounds that have been soiled and are sure to become venomous from the bacteria they contain. Although the making of this fluid still offers some difficulties and will for a time prevent its universal adoption by veterinary practitioners and will yield its quota of unsatisfactory results through careless manufacture and application, these obstacles are by no means insurmountable. The treatment should be worked out in every veterinary hospital, because if there is any place where an effectual antiseptic treatment of wounds is needed it is in domestic animal surgery.

### Other Valuable Applications for Wounds

Sugar, although not a new antiseptic, has been used more since the European war than it ever had been before and its merit has been brought into the limelight where previously no particular attention was paid to it. Magnus states that sugar wards off fermentation and sterilizes wounds through the powerful osmosis it sets up. The osmotic current floods the wound with secretions and thus cleanses it. But this lasts only until the sugar has been diluted. Market sugar was found sterile in 89 per cent of a number of bacteriological tests made with it, and no germs except ordinary saprophytes were found in any of the sample. He strews the cleansed and dried wound with a thick layer of sugar and applies a dry dressing over this, renewing it every day. Another great advantage of a sugar dressing is that it never sticks to the wound.

Salt is applied to wounds with good effect by laying it on alternate layers of gauze and then allowing water to drip upon the dressing.



Dr. A. Sanders, Jr., Stephenson, Mich., enjoying some of the pleasures that come along with the difficulties in general practice in the upper peninsula of Michigan.

The young son of Dr. A. Sanders, Jr., Stephenson, Mich., posing beside the mounted heads of a monstrosity that Dr. Sanders delivered last spring after the cow had been in labor twenty-four hours with a ruptured uterus.

## PARASITES OF THE DIGESTIVE TRACT

(*Continued from page* 300)

well expressed it, that any one treatment is going to rid the animals of worms. One has to keep it up, and sulphite of iron is a very economical remedy and it may be given almost with impunity.

DR. STEWART: I believe it would be well for Doctor Johnson to be more explicit concerning the treatment of a herd of swine. He said he would give them one or two doses. The statement would indicate that each individual would receive a portion. Suppose there are 50, 60 or 75 pigs in a herd and 50 or 60 adults. Is it his purpose that each individual shall receive individual doses, or does he mix it with the feed and allow them to help themselves to it and repeat the treatment at intervals?

DR. JOHNSON: It would hardly seem necessary to go into detail on that account. I prefer to select the hogs in bunches of six or seven or eight, and, if I am using something like sulphite of iron, mix that with the slop, middlings or bran or something like that; then let the animals get a little bit hungry and then allow them to go in and clean this up, after which I put in another bunch. It is not a difficult proposition. The difficult things about these matters is that when one attempts a detailed treatment, the farmer will not follow his instructions. He may do it once or twice, but that is usually the extent of it. The average farmer wants something that will trouble him least. If he can get something to put out on the ground that the hogs will get, that is satisfactory to him; but I think if one fixes a pen so he can feed six or seven or eight hogs at a time, it is best. A man can follow that system on a farm with a herd of 400 or 500 with fairly good results. But the treatment must be continuous. Treat all the animals, because one cannot tell from the general appearance of the hog whether he is harboring intestinal parasites or not.

### Epsom Salt an Effective Vermifuge

DR. D. M. CAMPBELL: I am inclined to think that possibly errors of technic or dosage account for some failures that have been mentioned here so often. I believe the method of administration is an important matter. There is a veterinarian in western Illinois who has attained an enviable local reputation for eradicating intestinal parasites of hogs. It means considerable to him. Farmers before having their hogs treated for cholera often have this man to come and "worm them." He says it must be done just right to be successful at all. This is his plan. The hogs are kept away from water twelve to twenty-four hours, perhaps in warm weather not so long, perhaps in cold weather forty-eight hours. Then he makes a fairly concentrated solution of epsom salt. He figures the magnesium sulphate requirement of each hog, allowing, I think, one ounce for pigs and up to eight ounces for large hogs, and then he puts in twice this quantity to allow for waste and for some hogs getting less than their share. It is then given them in the watering trough. Being thirsty, they drink it, and that completes the worm treatment. Probably it does not remove all the worms in an animal, and possibly eggs are left to reinfest the animal, but the number of parasites is so greatly reduced that they cause no serious trouble before the time for marketing the animal. He has built up a desirable practice doing just this thing. He does not tell the farmer what he is giving. Possibly he disguises the epsom salts with charcoal or other coloring matter. This treatment differs from many others in that nothing is left to the volition of the hog. He is first made so thirsty that he must drink his medicine. In this it closely approximates individual treatment and it is accomplished with a minimum amount of labor and furthermore the medicament is a very inexpensive one.

DR MAXFIELD: In a strong crop of pigs before they are badly infested, the remedy is 100 parts of wood charcoal to 15 parts of copperas, 10 parts of iron sulphite and about 5 parts of salt, kept in a closed container so that it will be dry and let them get at this box *ad lib.*

The above illustration is of the head of a fetal calf taken from the uterus of a grade short horn cow at the time of slaughter. The tube-like projection from the forehead represents the nose, inside of which were two hollow passages encased in a cartilagenous framework. In the natural position the end of this structure rested on the gums of the lower mapilla. In the picture it is elevated to show the location of the eyes which are in a depression in the face. Both eyes are in the one orbital cavity both having the same eyelids. There is no upper jaw, a layer of skin is projected across the superior surface of the mouth. The calf was normal except for the head.—F. R. Armstrong, Montreal, Canada.

# Therapeutic Digest

**By MART R. STEFFEN, Milwaukee, Wisconsin**

The Editor of "Medical Council" says: "Few local drug stores are equipped to prepare intravenous solutions which are of assured safety." If the honorable editor could see how some veterinary practitioners make and use intravenous medicinal solutions he would "exclaim in horror."

Veterinarians are rather careless about the preparation of such solutions, and they usually remain careless until they see some very marked harm result from the practice.

In another place I have in the past cautioned practitioners to use better sense in carrying out intravenous medication.

I have seen some very disagreeable results, or by-effects, follow the injection of a carelessly made solution intravenously. Conduct in the making of intravenous solutions which ignores scrupulous cleanliness and a regard for the delicacy of the procedure constitutes mal-practice.

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The frequency with which cases of poisoning in human beings with bichlorid of mercury have been reported of late makes it important that someone in each community be informed as to the correct manner of handling such cases. While the veterinarian does not include the human being in his list of patients it is barely possible that the possession of a knowledge of the correct antidote in such cases of poisoning may save somebody's life in an emergency.

While it appeared for a long time as though no antidote would be found, at least none that would act promptly enough to save life, it is pleasing to note that a comparatively simple and yet effective antidote is now being used.

"Medical Council" gives the following by Fantus: "Sodium phosphite 0.36 gm., and sodium acetate 0.24 gm., in tablet form. If this be not available, give the following: Sodium hypophosphite 1.00 gm., water 10.00 mil. and hydrogen peroxide 5.00 mil.

"If the amount of bichlorid is large, give more of the antidote, followed by washing out of the stomach. Give small doses of the antidote every eight hours for several days."

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In the "Five Minute Clinical Talks" of the Medical Times, Cornwall, of Brooklyn, says some very interesting things on "How to Treat Pneumonia."

A goodly number of his suggestions are in regard to things which the veterinary practitioner will agree to very readily, while a few of his remarks will occasion some surprise.

Dr. Cornwall says, in treating pneumonia:

1. Do not move the bowels artificially, except under extraordinary circumstances.

2. Be careful not to stimulate the heart unnecessarily or excessively, but on the other hand, do not delay too long before beginning the stimulation.

3. Treat symptoms definitely, but conservatively, and recognize the fact that all symptoms do not call for treatment; among which, perhaps, fever may be classed.

4. Do not give colonial and magnesium sulphate, or any other cathartic, as a routine procedure. Magnesium sulphate, in addition to possessing the other disadvantages of a cathartic in this disease, is a pronounced cardiac depressant and kidney irritant.

5. Do not give antipyretics; respect what may be a constructive or defensive process on the part of nature. But in extreme cases with long continued hyperpyrexia, antipyretic hydrotherapy may sometimes be employed.

6. Do not give drugs for a direct diuretic action, nor any expectant drugs.

7. Do not give drugs for the purpose of producing intestinal antisepsis; rely on diet for modifying the intestinal flora.

8. Do not give any drugs which have been recommended for an alleged specific or quasi-specific effect, such as creosote

carbonate, salicylic acid, quinin, urotropin, or camphor.

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At the 8th annual meeting of the American Association of Clinical Research, M. W. McDuffie, of New York, presented a paper on "A New Method of Treatment for Cancer." The author reports remarkable curative results from the intravenous use of trypsin, the active principle of the pancreatic juice.

If the results that the doctor obtained in the few cases in which he used the treatment can be verified more extensively, the cure of cancer by medicinal means is now possible.

The result in one of the reported cases borders on the marvelous. It is given as Case No. 2 and reads as follows:

Toney de Lucia, age 54, laborer, Italian, entered Metropolitan Hospital June 23, 1916. History incomplete, as patient spoke very little English. Ill three months before entering the hospital. Clinical diagnosis by Dr. Ralph Ward—sarcoma, right lower jaw with metastasis to glands of neck. Growth and enlarged glands removed by Dr. Ward and bone curetted.

July 18th recurrence in glands of neck size of a small orange, also along angle of jaw. Wasserman negative.

Treatment. Trypsin intravenously—marked reactions.

Patient left the hospital in eight weeks clinically cured, growth absorbed, general health markedly improved.

Dr. McDuffie uses **Injectio Trypsini,** standardized by the Fuld-Gross method. One mil. has been found to be the best average dose, every one to four days according to the patient's condition.

The reaction is very marked, a rapid and considerable fall in blood pressure occurs, sweating, diarrhea, vomiting, and pain at the site of the cancer.

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Bulletin number 459, published by the Department of Agriculture under date of December fifteenth, has some very interesting matter on the subject of energy values in the computation of rations for farm animals.

The author states that: "Rarely less than half and sometimes as much as three-fourths of the weight of the live animal consists of water."

The percentage composition of a live well-fed ox is given as follows:

| | |
|---|---|
| Water | 54.3 |
| Ash | 4.8 |
| Fat | 7.1 |
| Protein | 15.8 |
| Contents of stomach and intestines | 18.0 |
| Total | 100.0 |

In *Pharmacal Advance* we find, under the head of "Old Drugs in a New Light," the following on iodin: "Although iodin for external use has all through its history exhibited disadvantages, these seem to have been accepted as inevitable until, in 1910, when F. W. Crossley-Holland, chemist of the laboratories of Menley & James, Ltd., after extensive experimentation, discovered a process whereby elemental iodin could be incorporated with an absorptive, neutral bland base and retain all its inherent virtues without its many serious drawbacks.

Thus, Ung. Iodi M. & J. (Iodex) containing five percent of elemental iodin was presented. This product, Iodex, is as black as coal, yet when rubbed into the skin the color disappears rapidly, leaving no stain."

Iodex is an ideal form in which to use iodin in veterinary practice. It finds use in all conditions in which the local absorptive effect of iodin is desired. Samples and literature are obtainable from Menley & James, 168 Duane St., New York, N. Y.

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### Judging Dairy Cows

By G. C. Humphrey, Madison, Wis.

Agricultural Experiment Station Bulletin 274, University of Wisconsin. In this brochure, detailed instructions are given for the judging of dairy cattle and distinguishing them from the beef type. The chief qualifications of a dairy cow are mentioned as power to produce offspring of her type, good size for her breed, capacity for feed, good disposition, good constitution, well developed udder, good health, dairy breeding and large capacity for milk and butter production. The discussion covers these points fully and is elucidated by means of illustrations, of which the pamphlet contains thirty-four. The Babcock tester and the milk scale, the score card, and judging contests, are also described and explained.

### The Care of Milk and Cream on the Farm

By E. H. Farrington, Madison, Wis.

Circular 63, College of Agriculture, University of Wisconsin. Among the important topics treated in this circular are the care of milch cows, the cream cooling tank, practical milk houses, dairy score cards, milk sediment test, care of the cream, producing first grade cream, variations in test of cream, etc. The five principal factors to be considered in the production of clean milk and which should receive the careful attention of the dairyman are enumerated as the stable, the cows, the milker, the utensils and the cooler. Adequate instructions covering each of these points are given.

# Queries and Answers

**The editor will reply to queries appearing here, as he is able and as opportunity permits, but he does not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.**

QUERY No. 286. When and how are appointments made to the position of veterinarian in the United States army? If by examination, when will the next examination be held? To whom should one write for application blanks for this position?

REPLY: The Act of Congress of June 3, 1916, established the veterinary corps of the army and provided for positions of assistant veterinarians, veterinarians and reserve veterinarians. The law provides that there shall be not to exceed two veterinary officers for each regiment of cavalry, one for every three batteries of field artillery, one for each mounted battalion of engineers, 17 as inspectors of horses and mules and as veterinarians in the quartermaster corps, and seven as inspectors of meat.

Applicants for this position shall be citizens of the United States between the ages of 21 and 27 years, graduates of a recognized veterinary college or university and shall not be appointed until they have passed a satisfactory examination as to character, physical condition, general education and professional qualifications. The physical examination is a very rigid one, and the educational and professional examination searching. Six days are usually required for the examination. It is held under the direction of the surgeon general of the army. The examination board consists of three medical officers and two veterinarians.

Assistant veterinarians are commissioned with the rank and pay and allowances of second lieutenant of cavalry, that is, $1,700 per annum with quarters, light, fuel, medical, dental and hospital service free and a month's vacation each year. After five years, they are eligible to the rank and pay of first lieutenant, $2,000 per year and allowances, and after 15 years' service, are eligible for promotion to the grade of veterinarian with rank, pay and allowances of captain. After 20 years' service, they are eligible to the promotion of major with pay (maximum salary $5,600 per annum) and allowances of that grade.

After each five years' service up to 20 years, the pay is increased 10%. Thus a captain with 15 years' service will receive $2,400 plus 30%, or $3,120 per annum with allowances. When attaining the age of 64 years, veterinarians are placed on the retired list and receive three-fourths of their pay at the time of retirement. Absence from duty on account of sickness involves no loss of pay.

The next examination will probably be held in July. Application blanks for examination may be had by addressing the Surgeon General, War Department, Washington, D. C., or from this office.

Those passing the first examination held after the formation of the Army Veterinary Corps and given standing according to their previous service in the army are:

**Veterinarians**

(To rank from June 3, 1916.)

Frederick Foster, 7th Field Arty.
Gerald E. Griffin, 3rd Field Arty.
Charles Douglas McMurdo, 10th Cavalry.
William George Turner, Q. M. Corps.
William V. Lusk, 2nd Cavalry.
Olaf Schwarzkopf, 3rd Cavalry.
Joseph R. Jefferis, 13th Cavalry.
Harry Frank Steel, 14th Cavalry.
Ray J. Stanclift, 8th Cavalry.
Coleman Nockolds, 1st Cavalry.
Eugene John Cramer, Q. M. Corps.

**Assistant Veterinarians**

(To rank from June 3rd.)

Richard H. Power, 5th Field Arty.
Henry W. Peter, 14th Cavalry.
William P. Hill, 6th Field Arty.
Jules H. Uri, 6th Cavalry.
Robert Vans Agnew, 5th Cavalry.
Charles H. Jewell, 4th Cavalry.
William A. Sproule, 4th Field Arty.
Fred B. Gage, 2nd Field Arty.
John H. Gould, 2nd Field Arty.
Walter Fraser, 13th Cavalry.
Walter R. Pick, 4th Cavalry.
Andrew E. Donovan, 12th Cavalry.
Burt English, 2nd Cavalry.
Robert J. Foster, 9th Cavalry.

George A. Hanvey, Jr., 6th Cavalry.
George A. Lytle, Q. M. Corps.
Robert C. Musser, 15th Cavalry.
Aquila Mitchell, 3rd Field Arty.
Wilfred J. Stokes, 1st Field Arty.
Oliver A. Barber, Q. M. Corps.
Herbert S. Williams, 5th Field Arty.
Alfred Lewis Mason, 6th Field Arty.
Thomas H. Edwards, 15th Cavalry.
Burton A. Seeley, 5th Cavalry.
William C. Van Allstyne, 10th Cavalry.
Sherman L. Teeple, Q. M. Corps.
Ingild Hansen, Q. M. Corps.
Loyd E. Case, Q. M. Corps.
James R. Haynes, 1st Field Arty.
George H. Koon, 12th Cavalry.
Ralph M. Buffington, 1st Cavalry.
Daniel B. Leininger, 7th Cavalry.
Joseph N. Hornbaker, Q. M. Corps.
Charles Edward Channing, Q. M. Corps.
Samuel Henry Saul, Q. M. Corps.
Alexander G. Fraser, Q. M. Corps.
George William Brower, Q. M. Corps.
Joseph William Burby, Q. M. Corps.

The professional questions given applicants for the position of army veterinarian in the examination on October 11, 1916, were as follows:

1. Describe the surgical anatomy of the dorsal region (withers and back) of the horse.

2. Describe the cross section of the front leg of a horse at the middle of the metacarpus.

3. In draft what muscle is most subject to injury from the collar? Give origin attachment and action.

4. Describe the action of the digestive juices on oats, from the mouth to the rectum.

5. Of what is a blood clot composed?

6. What are the provisions for preventing concussion in the hoof?

7. Give the natural paths of infection in glanders.

8. What parasites of animals are transmissible to man?

9. Describe the postmortem appearance of tuberculosis in cattle.

10. What is the best disinfectant to use for the following purposes and the proper manner of use? Disinfecting railroad cars, horse barns, picket lines, saddles, curry combs and brushes.

11. Describe the local and general action of cocain and the use of the drug in the diagnosis of lameness.

12. Describe chloroform anesthesia.

13. Give classification of "shipping fever" in horses and its prevention.

14. Differentiate gastric tympany and subacute obstruction of the large colon, and give treatment of each.

15. What is bacterin; a vaccine; an antitoxin?

16. Treatment of open joint?

17. Describe a radical operation for poll-evil.

18. Discuss the therapeutics of firing.

19. Name three diseases of human origin which may be transmitted to troops consuming fresh milk.

20. Discuss the postmortem changes meat may undergo.

21. What do you understand by meat poisoning and to what causes may this condition be due?

22. Differentiate the standard-bred horses and the thorough-bred.

23. Enumerate the points of a horse indicating his fitness for cavalry service and for artillery service.

24. What diseases in animals may be conveyed through infected food? What is forage poisoning?

25. Discuss the care of horses prior to and during a sea trip.

26. Describe fully how you would dispose of carcasses of horses or cattle in camp, which have died or been destroyed on account of infectious disease.

27. Describe new recent diagnosistic methods for glanders.

28. State concisely the restrictions imposed by the federal quarantine regulations in connection with the importation of animals from the Phillipine Islands, Canada and Mexico.

29. Describe a shoe for the relief of corns; a toe crack shoe; a shoe for a foundered horse; for a forging horse.

30. Discuss the advantages and disadvantages of a three-calk shoe.

QUERY No. 287. The patient in this case was a roan shorthorn, registered No. 219281, eighteen months old, and in condition to enter the show ring, owned by Lingle Bros., Evansport, Ohio. I was called to this case on January 1, 1917.

The symptoms on my first visit were of a typical case of indigestion, except the temperature was rather high, 105.2° F. The usual treatment was given but the results were not as expected. Laxatives were given freely and acted as usual.

January 8th, after the cathartics had done their work, this case seemed to improve, but still she carried a temperature from 103.5° F. to 105° F. and the lungs were gradually showing some congestion, while appetite and rumination practically ceased, and the owners were informed that the case was serious. At this time the case was a picture of pneumonia, and the usual treatment was administered, with the best of care on the part of the owners.

January 17th, the cow was "tapped," for it was thought she had developed hydrothorax. This operation proved a mystery to me as the trocar failed to bring forth any fluid, although it was certain that auscultation showed fluid in the chest.

The cow died January 25th, and post mortem examination revealed considerable fluid in the abdominal cavity. The liver was enlarged and weighed about twenty-five pounds, very pale in color and soft in consistency (watery); gall bladder was fully distended. The bowels and stomach seemed normal. The kidneys were not examined. The enlarged liver revealed the cause of the indigestion. In the thoracic cavity, the lungs showed marked traces of inflammation, but no serous fluid.

On opening the pericardial sac, about two quarts of pus and fluid of a foul odor escaped. The heart, pericardium, and middle mediastinum spaces were all highly inflamed and contained gangrenous spots. A piece of wire had pierced the right auricle (atrium) and the major part of it being in the cavity of the atrium.

How long was this wire lodged in the heart? Did this pus formation cause the diseased condition of the liver, and did this wire carry infection from the rumen to the heart? —G. C. Reese, D. V. M., Evansport, O.

REPLY BY DR. W. W. DIMOCK: It is of course impossible to tell just how long the wire found in this case had been lodged in the heart or its membrane. However, judging from other cases of a similar nature, I would say from one to five or six months.

The duration of traumatic pericarditis varies with the nature, character and rapidity with which the metallic body enters and the character of the infectious organisms entering with it.

If the nail or wire penetrates slowly it gives time for the development of a protective inflammatory reaction, while sharp cutting wires may enter rapidly and kill before any gross lesions are evident.

On post mortem examination we judge the length of time that the foreign body had been present by the amount and nature of the exudate in the pericardial sac and the tissue change that had taken place along the tract of the body and in the heart and its membranes.

I believe there is sufficient evidence in the great majority of cases to show conclusively that the degeneration found in the liver and kidneys in cases of traumatic pericarditis is due to the action of toxins and microorganisms circulating in the blood and that they come directly from the lesion in the heart .

The wire undoubtedly carried the infection from the rumen or reticulum to the heart.

Permit me to cite two cases, in cows, that represent the two extremes of this condition.

1. A cow from all appearances in perfect health dropped dead in the field. Owner suspected lightening stroke, poisoning, or some acute infectious disease. The History and post mortem examination eliminated all three. A piece of wire, used to fasten tags to cotton seed meal bags was found piercing the heart muscle. It had caused some laceration and hemorrhage but no gross evidence of infection and very slight evidence of inflammatory reaction along the tract from the recticulum to the heart.

2. A cow showing symptoms of acute inflammation of the lungs, some fever and abnormal heart action, was treated and apparently recovered. Two years later the animal died. Traumatic pericarditis with complete degeneration of the liver and kidneys and other parenchymatous organs due to general systemic intoxication from the suppurative traumatic pericarditis and as the immediate cause of death was revealed by the autopsy.

QUERY No. 288. What is the best treatment for worms in the horse? I refer especially to the long, round worms and to the oxyurus curvula or pin worm.

Many people in this section get proprietary remedies and claim to have excellent results from their use. I am not always successful with my treatment.

Kentucky. R. Y.

REPLY BY DR. H. D. BERGMAN: Ascariasis in horses, which refers to infestation with the long round white worm, usually the Ascaris megalocephela, I believe can best be combated by a course of treatment of tartar emetic, or tartar emetic and ferrous sulphate, followed by a purgative dose of aloes. The tartar emetic and ferrous sulphate may be administered in a variety of ways. Capsules containing two drams each of tartar emetic and ferrous sulphate may be given once daily for five or six days before feeding in the morning, or tartar emetic and ferrous sulphate, one and one-half to two drams each may be given for three days in succession on the morning and evening feeds. In an attempt to eradicate the parasites by a single dose, three drams of tartar emetic may be administered, dissolved in a quart of hot water, and poured over a bran and oats mash in the morning feed, the animal having been given no feed the evening before, and only one-half feed at noon. The above doses are for mature horses, and the tartar emetic should be cut to a dram at a dose for yearlings, and one and one-half drams at a dose for two-year-olds.

Anthelmintic treatment is as a rule followed by a purgative to get rid of the dead or paralyzed parasites, aloes being preferred for horses where no great amount of in-

testinal irritation is present, as aloes is in itself a vermifuge. A six-dram aloes bolus should follow the above treatment if there is no marked intestinal irritation; milder purgatives, such as linseed oil and calomel should be used, if considerable intestinal irritation is present.

QUERY No. 289. A farmer had a large herd of cattle last year, and the cows began to abort about the first of January and continued to do so until some time in April, when by this time about twenty had aborted. At about the latter part of July, the bull was turned in with the herd, the farmer thinking that by this time there was very little danger of the bull becoming infected or becoming a means of transmitting the abortion bacilli to others in the herd which had not aborted that season. Now these cows are all pregnant to this bull, and up to this date not one cow has aborted this season. This bull has in the meantime been sold and will be placed with a new herd this year. Do you think, considering the time the bull was kept from the herd after they had ceased to abort, and considering also that none of the cows that were bred to him have aborted this year, there would be much, if any, danger of his being the means of starting abortion in this new herd?—W. J. M.

REPLY BY DR. C. E. COTTON: Authorities differ as to the infection of abortion disease being transmitted by copulation. Practically all agree that the bull is the passive or mechanical carrier, especially where he is allowed to serve both healthy and infected animals. But whether a bull with systemic infection is capable of injecting the organism with the seminal fluid, remains to be determined. There should be a study made of this question which should cover a long period of time and would require a large number of animals both male and female. McFadyean and Stockman, after some experiments, conclude that the bull has no part in the dissemination of abortion disease, or, if he has a part, it is merely that of a passive carrier. W. E. Cotton could not demonstrate the presence of abortion bacilli in the reproductive organs of a bull that had been used to serve aborting cows, or in the testicles of two bull calves, one of which had been fed and the other injected with cultures of the abortion bacillus. He states that the bull does not harbor the organisms in the testicles. Schroeder states that he has found that bulls which are regularly exposed to abortion infected cows, rarely react with the agglutination test, notwithstanding that bulls which have received inoculations of abortion bacilli invariably react with this test. He says that the abortion bacilli rarely get into the bodies of male cattle in a way to cause modifications which can be determined by any means at our command. He adds, however, that bulls may play a very important part in the transmission of these organisms from cow to cow. He once succeeded in finding the abortion bacilli in an abscess of the epididymis. McFadyean, Sheather and Minett have shown that it is possible to inoculate a bull by introducing cultures of the abortion organisms into the prepuce. Williams claims that even though a bull reacts to the agglutination and complement fixation tests, we have no evidence to show that the infection is ever eliminated from the animal's body.

Hadley and Lothe carried out a number of experiments with a few bulls, on a small scale, and concluded there is no question but that a bull may acquire a systemic infection by experimental inoculation and by copulation with a cow that harbors abortion bacilli in her uterine and vaginal secretions. Whether or not such an infected bull is capable of disseminating the infection by cohabitation, remains to be conclusively proved. However, the soiled bulls with systemic infection used in this experiment did not transmit the abortion disease to the virgin, abortion-free heifers with which they were mated. They showed that certain bulls are less susceptible to and possess a greater natural immunity against abortion infection than do heifers and cows. In some cases this is apparently a sexual immunity. In other cases it seems to be an individual immunity. Whatever the reasons are, it is certain that something operates to exert a detrimental action on the abortion bacilli that gain entrance to the bodies of bulls, which so attenuates them that they are incapable of setting up immediate infection in susceptible heifers. This theory is supported by the fact that the serum reactions given by systemically infected bulls gradually become weaker until they finally disappear entirely. They also conclude that a bull acting simply as a mechanical or passive carrier of infection, gained as a result of serving infected cows, cannot transmit the infection to susceptible cows which he may subsequently serve, if a period of a few weeks is allowed to elapse between the services. This theory, in my opinion, is substantiated by the later work of Schroeder and Cotton, in which they found that the abortion bacillus disappears from the uterus within fifty days after abortion or birth and that they do not live in a non-gravid uterus. If they do not live in the uterus we should expect them to disappear from the prepuce and penis of bull.

Now, with regard to your question, I am of the opinion, in the light of our present knowledge, that there is no danger of this

bull being a carrier of the abortion disease into a new herd. However, it is good practice to douche the prepuce of all bulls, both before and after each service, with a mild antiseptic.

QUERY No. 290. September 8, 1916, a three-year-old, 1,600-pound horse was found at pasture, after a thunder storm, having a very ragged wound caused by barbed wire. The animal could walk and handle its limbs fairly well despite the fact that the wound was inflicted in the heavy musculature of forearm, about three and one-half inches below the humeroradial articulation. The periosturm was exposed about one-half way around limb on its anterior surface.

Suturing was not attempted, but the ragged parts of muscles and other tissues were cut away. This animal received the best of attention by the owner for several weeks and the wound has healed, but the shoulder muscles are much atrophied. I have treated them as I would in swinney, but without success. The horse has never put any weight on the limb since the first few days, except when getting up. It is carried in an extended position as would a dog with a briar in his foot, holding it forward and straight when walking.

The wound when healing had no discharge of pus except in its upper part. This discharged continually during the process of healing except in the later stages. The first month after the wound was inflicted there was discharged a very large amount of pus, but none has occurred during the last three months. At first the discharge was watery in nature. This was a $250 horse, and it seems that it will be necessary to destroy him. He can handle the limb, but cannot bear any weight upon it.

Please advise treatment and probable cause.—F. G., Indiana.

REPLY BY DR. J. V. LACROIX: Since no weight was placed on the affected foot since the injury has been inflicted, excepting for a few days after the wound was received, and since marked atrophy has occurred, it is probable that the joint capsule of the humeroradial articulation was open and infected. The character of the discharge is indicative of such injury. It is probable that anyklosis of the humeroradioulnar articulation has resulted. Lack of regeneration of the atrophied muscles, subsequent to the treatment that you administered, is significant of the preëxistence of serious injury to the atrophied structures or contiguous parts.

It is possible that adhesion of the extensor muscles of the forearm, due to the chronic inflammation that characterizes the process of granulation, prevents all carpal flexion and necessarily, flexion of the phalanges. This might account for the unusual position in which the leg is carried.

The foregoing opinions, given without having examined the subject, may, of course, be erroneous; but I suggest that you ascertain if there is ankylosis of the elbow joint and if so, that the subject be humanely destroyed forthwith. Please report your findings.

QUERY No. 291. I was called on December 20th to attend a case of abortion in a six-year-old mare, about six or seven months gone. The owner having examined the patient thought the colt might be saved. Upon arrival and examination of the mare, I found a dead fetus. After the removal of same and further exploration, I found a live fetus. In this case could the live fetus live and develop as in normal conditions providing the fetal membranes have not been disturbed?—J. S. H.

REPLY: Our teaching on the subject and experience lead us to believe that once the mouth of the uterus is fully dilated, it must be evacuated. However, bearing on this case, I may say that I have delivered twins from a mare in which one colt was in an advanced state of decomposition and the other alive and healthy, and such cases have been reported by readers of the Journal a number of times. Further, it is not uncommon for one twin to die at six or seven months and to be carried for a time and delivered with the other, a live healthy colt. In most of these cases, however, mummification of the dead fetus rather than decomposition usually occurs.

QUERY No. 292. I have a brown gelding eleven months old, under treatment for nearly a year. I have tried almost everything and nothing seems to have a permanent effect. He has a patch the size of a cup on each side of the pastern which discharges a yellowish oily fluid, slightly offensive in odor. You can't say the skin is broken, but this oozes out continuously. The other leg and foot were the same, but recovered under lead lotion and tincture of iodin alternately, but this one persists. What is the condition and what line of treatment should be used?—C. C. M.

REPLY BY DR. QUITMAN: The condition is seborrhea. The following may be found beneficial:

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| | |
|---|---|
| Ac. salicylici | ʒj |
| Petrolati | ʒx |

M.

Sig. Apply two or three times daily.

If there is no improvement in ten days,

use one-half again to twice as much of the salicylic acid.

The following is also useful:

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| | |
|---|---|
| Ac. salicylici | ℥j |
| Alcoholis | ℥x |

M.

Sig. Apply two or three times daily; increase as above if necessary.

Sodium cacodylate hypodermatically or Fowler's solution of arsenic by the mouth will aid in the cure.

QUERY No. 293. Will some one please explain the best technic for dilating the os uteri in nonpregnant cows as to instruments, sequelae, etc. V. E. S.

REPLY BY DR. BEMIS: Proper dilation of the cervix uteri of the cow is the first step to be taken in preparation for the treatment of diseases of the uterus, such as acute and chronic endometritis, pyometra and mummification of the fetus.

The preparation necessary is first to empty the rectum by dilating the anus, using the first two fingers of each hand as retractors until air enters the rectum and defecation is stimulated, then thoroughly cleanse the external genitals, tail and perineum. Instruments necessary are: a vagina speculum, long and short uterine forceps, dilator, and irrigating tubes of varying sizes.

Before proceeding to work, be sure that the animal is not pregnant which will be manifested by the presence of the mucous seal in the cervix, and the presence of the fetus in the uterus as discovered by rectal palpation. If the animal is too small to allow the hand to enter the vagina, the speculum should be used to expose the external os, the long forceps introduced and one jaw inserted into the opening canal while the other is applied to the external surface and the forceps closed down upon the tissues so included. The cervix can then be pulled toward the exterior and the short forceps placed in the same manner diametrically opposite the first. Remove the speculum. If the vagina can be entered, lubricate the hand and arm with green soap, insert the hand, guide the forceps to the os and insert as before. The forceps should be pulled backward and outward so as to fix and open the os.

With a closed dilator work carefully through the cervical canal by using rotary movements so that the end of the dilator will follow the tortuous course more naturaly. Sometimes it is necessary to open the dilator as far as possible, after it has entered the first open portion of the canal, in order to stretch and tire the circular muscles for some minutes, after which it passes on to the next fold, when the stretching process must be repeated the second and third time when it finally passes on into the uterus.

In most cases, especially when the uterus is diseased, the dilator passes in comparatively easily but sometimes it is necessary to work for a half hour or longer to accomplish the object without laceration. After the dilator has passed into the uterus, then it should be opened and slowly withdrawn while open, in order to open the cervix enough to allow the passage of the drainage tube.

The dangers accompanying the operation are:

1. Dilating the cervix of a pregnant animal with resultant abortion.

2. Laceration of the cervix followed by inflammation or abscess in the walls.

3. Perforation of the walls into the peritoneal cavity if too much force is used upon the dilator.

The instruments used are those contained in the uterine set recommended and used by Dr. W. L. Williams.

QUERY No. 294. Am writing for information, having lost several cases suffering from impaction of the rumen, as post mortem showed. I have tried Dr. Steffen's treatment of fasting and slight stimulation, but they all died. I have tried the stimulant treatment to full extent, or until the physicological effect was produced, magnesia sulphate, linseed oil and almost everything but rumenotomy, and the dairymen here are "afraid of the knife," as they say. Can you advise me at once?—V. H. S., Ohio.

REPLY: In case of impaction of the rumen where the case is of several days standing, or for other reasons, relief does not come from the administration of a rational line of medication, surgical intervention is necessary. Veterinary practitioners have for some time been successfully using, what is termed by instrument dealers "rumenotomy outfits." These instruments consist of a large trocar and canula, and includes also a long, slender metal tube that may be passed through the canula and used to stir the contents of the rumen and likewise to deliver fluids or solutions into different parts of the rumen. These instruments are very practical and results are generally very good where this treatment is resorted to early. Failing to give relief by use of such methods, rumenotomy, as it is usually done, is, of course, the thing to resort to.

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I received the Journal. I have been without it for a year and am glad to have it with me again. It is as necessary to veterinarians as the steering wheel is to an automobile.

Fayette, Miss. Dr. F. J. Bardsley.

# Department of Live Stock Poisoning

By L. H. PAMMEL, Ph. D., Ames, Iowa
Professor of Botany, Iowa State College

**It is the intention of the writer to use these columns to discuss the subject of poisonous plants. I shall, therefore, be glad to have readers of the American Journal of Veterinary Medicine send specimens of alleged poisonous plants to me. The queries will be given prompt attention.—L. H. P.**

## Poisoning from Oaks

THE article on poisoning from oak* by Dr. O. F. Foley brings up an interesting matter. We have a great many different species of oaks in the United States. They are divided into the black oaks, white oaks and the chestnut oaks. Experience from many sections of the country has indicated that white and chestnut oaks are non-injurious. Not only have the acorns of white and burr oak been found useful to feed to animals, but man has made use of them. Concerning the use of these for food, I desire to say that I knew from my boyhood experiences in Wisconsin that we used to let our hogs feed on oaks indiscriminately and I do not recall the death of any of these animals. I also know that cattle have consumed the white and burr oak acorns without injury. It is of course a regular thing to allow hogs to run at large in some parts of the South like southern Missouri and Arkansas, to feed on the acorns. In some cases this is about all these animals get in the fall.

On the matter of the food value of acorns Dr. D. M. Campbell writes me as follows: Enclosed I am sending you a report from Dr. O. F. Foley, that is strongly suggestive of plant poisoning. I know that a number of cases of oak poisoning have been reported; but I have always been inclined to look upon them with considerable doubt.

I well remember the summer of 1901, during which I was living on a farm in Kansas and on account of an unusual drouth there was no grass or other forage on the farm to support about twenty head of cattle. We had a flat, comprising about five acres, that was thickly wooded with small oak trees (*Quercus rubra, Quercus macrocarpa, Quercus tinctoria* and some others).

This herd of cattle lived for several weeks, as well as I remember, perhaps four or five weeks, with nothing to eat but oak leaves and acorns and did splendidly, even putting on flesh, during the time. They only ate acorns of the bur oak and perhaps also a variety of oak called pin oak in that neighborhood. I do not remember its botanical name.

A letter from L. Fredenburg, of recent date, states: "We have had here in Kansas extensive losses of steers recently shipped from the south from so-called shinnery or shin oak poisoning.

"This oak is not found in this part of the state and I am not able to send a specimen but would be pleased to have you take this matter up in some future article. Two years ago over one hundred head of three-year-old cattle were lost out of one shipment, and neither our state nor B. A. I. men were able to account for the loss."

I am at a loss to know what the shin oak is. I wonder if this might possibly be the shingle oak (*Q. imbricaria*).

About two years ago Mr. R. B. Hovey of Independence, Iowa, called on me and mentioned the loss of several cows from browsing on the black oak which I later identified as *Quercus velutina* which is the same as the *Quercus tinctoria* referred to by Dr. Campbell. Mr. H. W. Hovey wrote me the following letter: "With regard to the oak trees that were cut down and from which the two cows browsed from, they are of second growth of about four to eight inches in diameter. There are three or four varieties grown on the premises, pin or (as some call it) jack oak, white oak and black or red oak. No acorns were found on only those sent by mail. These specimens were found near where one cow was

*Mountain Disease, page 244, April A. J. V. M.

found dead. The cow which Dr. Kippen opened and examined the contents of her stomach showed acorns in the stomach. Afterwards, Dr. Kippen examined a German book, written by Friedberger & Frohner, on Pathology and Therapeutics, edited by W. L. Zwill. On page 230 will be seen an account of cases from 1868-1879, where domestic animals were poisoned by eating the young acorns. These cases were in England, all domestic animals except the hog, died from eating the acorns. The cow that was examined by Dr. Kippen was buried soon after being found." In a second letter to Mr. Hovey the elder Mr. Hovey says:

"Your letter came today. I have been out to the lot to gather acorns and small twigs of oak trees which were cut down a week ago last Friday. I will send under separate cover the twigs and acorns. These twigs were gathered from trees cut near where one of the cows died, and were identified by me." Mr. Hovey states that all of the trees were fallen.

The bark of the Quercitron oak is rich in tannin. I find that the bark contains a high percentage of tannin, 8 per cent being quercitrim. Molineri[1] gives the percentage of tannic acid in percentage as follows: oak barks, 10-20; mimosa, 30; leaves and twigs of shumach, 15-30; valeria, 20-45; Asiatic gall nuts, 55-75; catechu or cutch, 45-50; quebracho wood, 22; horse chestnut bark, 2-3. Any injurious effects from the oak must come from the tannic acid found in the twigs, acorns and bark.

Dr. H. D. Bergman, of the Department of Physiology and Pharmacology of Iowa State College, has been kind enough to furnish me the following statement: "Relative to your inquiry regarding oak leaf poisoning and the toxicity of tannic acid, will state that according to Lander the general features of oak leaf poisoning are not unlike those of acorn poisoning, or the so-called 'acorn disease,' which has attracted some attention at different times. Cattle are apparently quite susceptible, the general symptoms being those of gradual emaciation, loss of appetite, cessation of rumination, lactation, and constipation usually terminating in a fatal diarrhea. Cornevin states that fever and nervous symptoms are also observed in oak leaf poisoning and that aside from gastro enteritis, acute nephritis may be present with enlarged kidneys and dark, bloody urine.

Lander states that the only known agent of poisoning by acorn, oak and beach is tannin whose action is in general that of an astringent, and in excessive amounts is dangerous, by—(1) causing gastric disturbances due to recipitation of proteins; (2) producing constipation due to its astringent properties, and persistent diarrhea following this constipation.

The immunity of certain animals to acorns and the large amount of tannin required experimentally to cause a persistent diarrhea might oppose the above explanation.

It appears reasonable to the writer in view of the facts that we have a large number of natural tannins; possibly certain forms may be especially active, or again active principles not yet recognized may be present in certain tannins. Positive evidence along this line is lacking. The most common explanation of disorders due to ingestion of tannin or tannin containing substances is acute digestive derangement."

Winslow in his Veterinary Materia Medica (page 528) says: "Large doses irritate the alimentary canal and may create vomiting and diarrhea."

It is true that none of the authorities I mention speak of the toxic action. Dr. Bergman's note indicates that there may at times be an injurious action. In looking through Nitthay's Manual of Toxicology I find no reference to the poisonous action of tannic acid. This, of course, is not strange since this treatise records mostly cases that belong to medical jurisprudence. Dr. Bergman raises a most important point with reference to the question of compounds that may not have been isolated. You will note that these cases of poisoning occur in the black oak which contains the quercitrin oak (*Q. melutina*)—jack oak (*Q. marilandiea*) and (*Q. nigra*), scarlet oak (*Q. coccinea*), shingle leaf oak (*Q. imbricaria*), pin oak (*Q. palustris*), and red oak (*Q. rubra*), The acorns as well as the bark of the sweet mast referred to in my Manual of Poisonous Plants contains a large percentage of tannin—so much so that the chestnut oak for a number of years has been used for tanning purposes. I do not know that this has ever been reported as injurious. It is not unlikely that these injurious species may have some as yet undetermined product. Personally I have come to the conclusion that some species of oak are toxic. I am using the word toxic as synonymous with poison.

A. Mauquot[2] says it is applicable to substance which in small doses are capable of producing structural alterations or functional disorders of a more or less grave character or death. It may be that seasons and localities may cause a change in the toxic properties of the plant.

The English oak mast seems to have been used in Europe as food for swine since Saxon times in England and large herds of swine are fed on acorns in Germany, where the large oak forests occur. During times of

(*Continued on page* 339)

[1]Industrial chemistry, English translation by T. H. Pope, p. 584.

[2]Principles of Therapeutics English translation, M. S. Gabriel 55.

# Pointed Opinions on Live Topics by Readers of Veterinary Medicine

**It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.**

## A Canadian Veterinarian's Experience in the War

REPLYING to your request for experiences overseas, I will say there are some we could wish to forget.

I was employed on veterinary inspection service by the Dominion government when war broke out, and together with some dozen of others, volunteered for active service, wherever our services could be utilized, and in August joined the Princess Patricia's Canadian Light Infantry, (P. P. C. L. I.). They had some very valuable horses and wished me to take charge of them. I was given the rank of farrier sergeant (I think there was but one other sergeant, and we all received privates pay), and went overseas with the 1st Canadian Contingent, some 33,000 in 33 ships. The P. P. C. L. I. went to France in December and that winter in France and Belgium, with constant rain, mud and bitter cold winds, was full of hardships for us, whose only shelter was such as was afforded by getting under a wagon (when we could find such a place unoccupied), but it was doubly hard on the homeless women and children whom we constantly met, and with whom we gladly shared what we had, usually bull beef, biscuits and cheese. Hunger, cold and wet from which all suffered was the least of their troubles. The half has never been told of the Belgians' sufferings. It is too awful, too beastly, to print, but the terrible sufferings of those women and girls put new strength into the men, and the greatest wonder of the war is, that our men ever took any prisoners at all, but, if those who ravished this country and its helpless women and children are not fit to live, surely they are unfit to die, and we can but hope that under a new and wise government the German nation may yet live to redeem their character and take their place among the nations.

Our men suffered untold agonies that first winter; rheumatism, trench fever, frost bite and erysipelas were all contributors to their suffering. Many could not remove their boots because their feet were so swollen that they would not have been able to get them on again. When I was wounded I had not had my boots off for several days, and today my toes are drawn under my feet like birds' claws. All of these experiences we would gladly forget if we could.

How good it seemed to snuggle down into a clean comfortable bed at the hospital, and to see cheery, bright smiling faces again! It seemed that I never would get caught up with my sleep. All the sleep that we had at the front was just snatches of sleep of exhaustion and utter weariness.

On leaving hospital, I was transferred from the P. P. C. L. I. to the Imperial Army Veterinary Corps (A. V. C.). I understand that some ninety odd Canadian veterinarians joined the A. V. C. with the rank of Lieutenant for one year. On re-enlisting for the duration of the war, they received the rank of Captain. I then volunteered to go to Egypt with a howitzer battery of artillery.

The wonderful trip up the Mediterranian was one to remember with pleasure. I had on board some 800 transport horses belonging to infantry units; together with

my own battery horses, and was kept fairly busy to land them in as fair condition as possible. One never can land them in as fit condition as he would like. The greatest difficulty being ship pneumonia in spite of every device for fresh air between decks. Yes, there is plenty of work in a transport ship, and plenty of fun, too. The pleasant companionships of the officers of the boat, the many friendships formed, the songs in the evening, the spice of danger of submarines, all helped to make it a trip of pleasant memories and what splendid fellows these seamen are. It has been my very good fortune to mix and mingle with them many times, and I shall always feel like raising my hat to a Jackie. The safety of us all is in their keeping and how well they play their part is shown by the fact that we can sleep in our beds in peace and our wives and children are safe.

Other pleasant memories of that trip are those of Egypt, after the heat and duties of the day, the quiet rest in shade of the tent in the evening with a cheery comrade. And again in a hospital ship homeward bound with some 1,400 wounded on board. The peaceful rest, the beautiful sea, blue as the sky above, the interesting stops at Malta and Gibraltar; the pleasant companions aboard and later the white cliffs of old England.

After a long rest, I volunteered to go to France again and went in December, 1916, only to break down again a few months later with my old trouble, lapse of memory and paralysis resulting from brain and spinal injuries received that first winter at Ypres.

And now in spite of these unpleasant reminders of France, I wonder if there is not something that I could do, when so much remains to be done. I wonder why I have been left and younger (I am 56), and better men are taken. Only last week, I was told of two more Toronto veterinarians who have paid the price. One, Major Chas. G. Saunders,* known to every reader of VETERINARY MEDICINE by his writings on canine and feline diseases. I saw him last somewhere in France, when another Canadian veterinarian and myself were on our way up to the front, we hunted him up and spent a very pleasant hour with him and his brother officers. And I am reminded that he was much interested in your own efforts for the formation of an American army veterinary corps, and that while in Egypt I met an American veterinarian serving as a private in an Australian regiment, who told a story of one of the party of American veterinarians who visited Europe in 1914, and how some of Dr. John H. Blattenberg's lady friends presented him with a complete outfit of lady's clothes, to be worn in case of an accident to the ship, it being the rule of seamen, women and children first. We could scarcely credit the story, but he said he had read it in the American Journal of Veterinary Medicine. Well I pity him, the woman-man, if he had been caught at it.

I shall not know how much I have missed until I get my back numbers of the JOURNAL; I am interested in learning what progress your own army veterinary corps has made in its formation. Those of your own veterinarians who have been serving with the Allies have a very special work in helping you in this matter. I have wished sometimes that there might be an interchange of officers between us, it would create many friendships and none of us are too old to learn. No one college or one nation has a corner on all the best men or best brains, each can learn something of the other. Let us get together. For myself, while I hope I have profited by the practical experience of the last three years, I feel hopelessly out of date in other matters and hope to get some interesting reading in the back numbers of the AMERICAN JOURNAL OF VETERINARY MEDICINE, which please send to me at once.

C. W. FINNEMORE, Capt. A. V. C.,
67 Macdonall Ave., Parkdale.
Toronto, Can.

*This report was inaccurate. Later information is that Dr. Saunders is well and with his regiment.—EDITOR.

## ANTI-ANTHRAX SERUM SUCCESSFULLY USED ON CHINESE LABORER

A Chinese farm laborer entered the hospital Nov. 24, 1916, suffering from malignant pustule on the outer part of upper right arm. The method of contamination was unknown. The local symptoms observed five days previous to entering hospital were yellowish eschar 3 cm. by 4 cm., surrounded by vesicles; extensive edema of entire arm and hard areas extending upward involving the shoulder and portion of thorax; the pulse was 55, temperature 39°C.

The pustule was cauterized immediately with the thermo-cautery, and the patient was given a subcutaneous injection of 20 cc's. of anti-anthrax serum (horse).

Nov. 25, the temperature was 39.4°C.; the patient complained of pain in head and neck. There was some insomnia; he took very little nourishment. The subcutaneous injection of anti-anthrax serum was repeated, 22 cc's. being given.

Nov. 26. Patient not seen.

Nov. 27. Temperature 39.8°C. Pain in neck still present; slight diarrhea. A sub-

cutaneous injection of 15 cc's. of serum was given.

Nov. 28. Edema almost gone from arm. Patient looked and felt much better. Took nourishment. Rested well.

Two days later patient left hospital, returning every third day to have the pustule treated. The eschar came loose and was removed about ten days later.

F. C. HERSHBERGER, D. V. M.

Ta-hei-ho, N. Manchuria, China.

## PREPUBIAN TENDON AND UTERUS BOTH RUPTURED

I was called to see a sick cow, and on getting the history of the case I was told that she had not defecated for two days. After an examination I told my client that we might have a case of impaction, but that was not the primary trouble. I told him there was a calf in the abdominal cavity and pronounced the case rupture of the prepubian tendon, also I treated the cow for impaction and gave a positively unfavorable prognosis. Her bowels emptied

Photo by Dr. A. D. Gemmill, Celina, Ohio.

out nicely the following day and she appeared better. When I got home I read all I could find on the subject, but could find only one case recorded where the prepubian tendon had ruptured in the cow. It was commonly reported in the mare. So I decided this must be a case of rupture of the uterus or a straight case of abdominal pregnancy. The next day I was called back and found the cow lying on her side, terribly bloated and gasping for breath. Thinking perhaps she had eaten something that had started fermentation and that she was filled with gas, I inserted the trocar and canula. On removing the trocar I was surprised to find that no gas escaped, I inserted the trocar to remove the canula and I noticed water escaping around the trocar, I again removed it and the water flowed out of the canula in a full stream and continued to flow for over thirty minutes. After the water was removed the cow got up and we took her into the barn. The cow died the night of the following day and I went out and autopsied her. On opening the abdominal cavity, I found the calf lying on the floor of the abdominal cavity clear outside of the uterus also also out of the fetal membranes. On further examination I found the prepubian tendon entirely divided, the uterus ruptured and also found that my trocar had not entered the rumen at all and that all fluid that I drew from her was in the abdominal cavity.

Nokomis, Ill. E. E. NELMS.

## "PITFALLS" IN NORTH CAROLINA PRACTICE

Reading in the January issue of the American Journal of Veterinary Medicine, "An approval from Ireland," and in the March issue, "A simple confession is good, etc.," has made me think that possibly I am not the only "fool" in the veterinary profession.

One disagreeable feature about association meetings, is those present forget the cases that turn out badly and relate only the successful ones.

In discussing an operation for instance, rumenotomy, they describe the most careful preparation and technic and do not say that half the cases (or at least mine have), come at night, with possibly one assistant and a dim, dirty lantern for a light. In castrating cryptorchids they do not mention the ones where they searched for the hidden testicles one hour and forty minutes, then perhaps removed the right kidney.

I have had some sad experiences which now seem laughable to me. I was treating a case of impaction of the bowels in a horse once and had worked with the case several days. I had got the bowels open and they were moving too freely to suit me so I decided to inject five grains of morphin in the jugular (one grain hypodermically would have been sufficient). I made my injection and behold the horse threw back his head and pitched forward dead just after I had removed the needle. That, of course, suggests strychnin poisoning. I had got hold of the wrong bottle.

A man watching the procedure let me out

real easy when he said, "I knew when I saw that black blood he could not last long."

Another case was a mule brought to me with a hard lump that had appeared suddenly on one shoulder. This was hard to the touch and there seemed to be no pus in it. I recommended blistering and this was done several times without changing the appearance of the "tumor," so I told the owner the only thing to do was to dissect it out. I took my casting harness out to his place and was doing what I thought would make Merillat look like thirty cents, when suddenly I cut into the pus cavity. This brought the operation to a quick termination and I then and there learned a good lesson about "cold abscesses" of the shoulder.

My client still thinks me quite a surgeon for knowing that pus was there when it was so deep.—T. N. S.

## BAG OF COTTON PREVENTS EVERSION OF THE UTERUS IN A MARE

I was called upon one morning recently to visit a mare that had just given birth to a colt and "was not doing well." The owner urged me to make haste as the mare was "in a bad way." Upon arrival I found the mare down and unable to rise, with a complete prolapse of the uterus. The uterus was lying in about three inches of finely powdered barnyard manure and by repeated struggles the mare had succeeded in completely coating the entire surface of the organ with filth.

Material to work with being scarce I called for a clean piece of canvas. The best that could be had was a strip of binder canvas with the slats on. I worked this under the uterus as carefully as possible and thoroughly irrigated it with warm water that had been boiled. Fortunately I had some clean muslin with me which I now placed on top of the canvas and under the uterus and proceeded to irrigate it some more until all of the blood clots and filth had been washed away.

I then replaced the uterus, but as the mare constantly strained, I saw that it was going to be difficult to keep the uterus in place. I tried injections of water with no success. I then asked the owner for a clean flour sack that had been bleached and had him put it in boiling water for fifteen minutes. After squeezing the water out of this, I filled it partially with sterile cotton, covered the outside of the sack with clean lard and sprinkled about one dram each of fluid extract of belladona and echinacea over the surface and introduced it into the uterus which I had been holding in place with my arm and hand. I then continued the introduction of more cotton until the sack was pretty well filled. In about thirty minutes the mare had ceased all efforts to expel the uterus or its contents and was resting easy. In about an hour with the aid of five or six strong men, the mare was able to get to her feet. I left the pack in for three hours and then removed it and irrigated the uterus with a weak solution of potassium permanganate. The mare made a splendid recovery; she was begging for feed that evening. I believe this kind of a pack has an advantage over water because of its light weight.

Phillipsburg, Kan. C .S. CONNOR.

## TEN OPERATIONS ON A TALKATIVE MACAW

I am indebted to the Veterinary Medicine Series for some very good ideas, and one in particular, which by the way, proves that a practitioner never knows what he may want to know.

I had appreciated Kaupp's "Poultry Diseases," but thought it would never amount to much in my practice. But I was called one evening to see a scarlet Macaw, a beautiful red, purple and yellow bird of the parrot species, but about three times the size of a parrot. Age about 85 years, which is a mere child in point of years for a macaw. This bird had a history of having laid an occasional egg for the past ten years, but for the last two years had ceased to lay.

A hard tumor-like lump had been forming in the region of the cloaca. It had now grown to half the size of the bird's body, being very hard and heavy, and surrounded by a viscid serous fluid. The bird's general condition was alarming. There was marked dyspnea, emaciation and loss of appetite. When it comes to sympathizing with herself, this bird was a perfect lady and knew all the sob-sister talk like a soubrette.

I reviewed "Poultry Diseases" hurriedly and decided to operate at once, and give her a few days longer to live at least. I had no hope of complete recovery, since the general appearance of the case would not warrant it. I had an experienced assistant and a mighty talkative patient. No anesthetic was necessary as the operation seemed to be painless. After the fluid content of the tumor was removed, the dyspnea seemed to be largely relieved. Only a small portion of the tumor itself was removed at this time. The tumor was composed of caseated pus, egg shells, etc., evidently formed from decomposed eggs, following the obstruction of the cloaca.

A second operation was necessary on the

following day to remove the fluid and relieve dyspnea. More of the tumor was removed at this time. Operations were necessary every two to four days for 18 days. During this time the bird was growing weaker. There was a continual discharge of fluid from the wound and a very irregular appetite. No pain or uneasiness was manifest at any time. The bird knew me and hated me heartily. As the body of the tumor gradually decomposed and passed out through the incision, the abdominal organs which had been crowded for two years began to sink down to their normal position, and the heart action was continually growing weaker.

I was present when the bird died. I could have enjoyed a good weep with the mourners for this was the most intelligent patient I have ever treated. While I was convinced from the first that such an extensive disorder could not be corrected, yet I missed this loquacious patient mightily. One tea cup full of solid pus, etc., was removed, which was about half of the entire mass of the tumor. The animal died in a fluttering faint from heart weakness.

Albion, Mich. H. L. Cotton.

## INHUMANE METHODS OUR GREATEST HANDICAP.

I want to commend the article in the February issue by Doctor Little, on painless surgery. It seems to me that his suggestions are very timely. When scientific men write articles for publication describing such major operations as cesarean section, or even oophorectomy without anesthesia, as occurred last month, it seems time to call a halt. We all, no doubt, have engaged in some inhuman and brutish practices, but we should at least be ashamed to publish the facts. We will never advance as a profession to our proper level until we get over the idea that an operating room need be equipped with means for restraint only. Cruel practice does more harm to our professional standing that all our other mistakes combined, no matter how widely advertised they may be.

I have written Doctor Little and he promises further data when he has had opportunity to use this anesthesia on large animals. To those of us who do not have trained assistants the administration of general anesthesia is both difficult and dangerous and if Doctor Little's method proves practicable for large animals all humane veterinarians will be grateful to him for these experiments.

I enjoy Doctor Steffen's articles very much. I must disagree with his statement, though, in the March issue, that we are unable to rise above the social status of the horse doctor. I believe our social status is determined by our conduct and our general qualifications and not by our business or profession. I confess that I have not traveled as extensively as the "Itinerant Horse Physician" but I am acquainted with a large number of veterinarians who are accepted in the best society of their home towns. Where a large income is essential to social standing the veterinarian is handicapped, but it has been my experience that in the country town or smaller city the veterinarian who conducts himself as a gentleman is accepted as such and his standing is not affected in any way by his vocation.

W. E. Stribling, M. D. C.

Clarence, Iowa.

## VETERINARY EXPERIENCES IN NORTH MANCHURIA, CHINA

It is hardly fair for me to attempt to give you an accurate description of Chinese conditions, customs, etc., as my work has been limited to Manchuria and the China-Russian frontier. Here in Manchuria one gets the impression that he is living more in Russia than in China. All the Chinese in the northern portion of Manchuria speak the Russian language fluently, dress in the Russian fashion, have semi-Russian homes, etc. The principal railway line in Manchuria is owned and operated by the Russian government, as are also all the steamers plying on the Amur and Sungari rivers.

Veterinary conditions in China, at least in this part (and I hear they are much worse in the south) are about the same as they were in New England at the coming of the Mayflower. Every Chinese city has from one to a dozen "veterinary quacks" holding forth in some sort of a mud hospital. These quacks usually belong to the lower or coolie class. They seldom can read or write their own language. Each quack possesses a long (four-inch), rusty needle, which is inserted at one end of an ordinary stick of wood. He also carries in stock some mysterious mixtures, decoctions, concoctions, etc. The needle is used on every horse that enters the hospital and often it is immediately followed by a drench of a few quarts of some unknown liquid (often per trachea). If the patient has ventral pain, the needle is thrust into the subject's abdomen from four to forty times. If the affection is of the joint the same treatment is given at that part. One quack told me that he charges according to the number of punctures he makes. Each treatment costs about four dollars. The M. D. quacks employ about the same

methods, except that they use either a silver or a gold needle and employ a larger variety of drugs. This is a sample of their work:

1. Chinese boy suffering with intestinal trouble, son of the local postmaster. Chinese M. D. called in, advised use of silver needle in palm of boy's hands; all fingers were given deep puncture and in a few days the boy was sent to the plague hospital suffering from septicemia. The doctor in charge (foreign trained) refused admittance.

2. Similar to first, except the punctures were applied over the abdomen, death resulting from septicemia.

The higher class of Chinese continue to use the native doctors here, although this place is supplied with one free hospital and three foreign trained physicians.

My principal duty here is to combat anthrax and look after the frontier inspection. I have one assistant (native) who lives at the inspection station and does that portion of the work while I am working in the field. My working time here is only five months each year, from May 1st to September 30th. The rest of the time it is almost too cold to look after things veterinary.

Traveling here is very uncomfortable. When working in the field we travel in huge two-wheeled carts drawn by from three to five Mongolian horses. These carts are springless. There is absolutely nothing *de luxe* about them. To facilitate my work here on the frontier, I am supplied with an English and a Russian interpreter. Contrary to outside reports, a foreigner is perfectly safe working or traveling anywhere in the interior. Some of his personal effects may be missing at times, but his life is always safe.

The Chinese are a superstitious race. Last summer at one village where the horses were dying in great numbers from anthrax, when I arrived I found many of the villagers killing all their poultry and pigs and offering them up to some evil spirit which was supposed to be the cause of the plague. After saving a few sick cases by the injection of serum, the natives thought it wonderful, some even believing that I was a special agent sent to them from the "Good One."

In passing I wish to say a word about castration as practiced by the natives. The ancient method (the one used B. C. times) is the favorite among the farmers. The testicles are placed in clamps and allowed to slowly atrophy. In castrating the smaller animals the scrotum is incised with a razor and the testicles pulled out. No antiseptic precautions are used.

The sanitary official (chief) of this district is trained only in Chinese medicine. He looks after the city's health; he is the coroner and he is the city's meat inspector. His position is a political one. He receives a large salary and is allowed three assistants. But if there is any plague or disease present he is helpless and must always come to the foreign trained doctor for assistance.

There are several veterinarians across the river from here in Blogovestscheusk. Some are in private practice, but all are connected with the Russian government. I often go over and visit them—they are very congenial and willing to help me out or accommodate me in any reasonable way. The Russian practitioner seldom answers a call in person. He nearly always sends his assistant (or felsher)—a man with a limited training in veterinary science.

This month starts me off on my third years' contract by mutual agreement. This contract will end next autumn, so that I may get away from here before the winter sets in. I expect to return to the States early next winter and most probably I will not return to China.

There are living here one Dane, one Englishman and one Frenchman, with their families. They are all officers of the Chinese Maritime Customs. At present there is an American living in Blogovestscheusk. He is connected with the International Harvester Co. of the U. S. A. This company maintains a large office in that place.

The manager of the Manchuria Development Co. of the Sungari river in a recent communication informed me that their company will put in cattle on their large Sungari farm and that they will need the services of a veterinarian the entire year. The manager, Mr. Palen, is a graduate of Cornell University. He has lived in China nearly fifteen years.

F. C. Hershberger, D. V. M.,
Ta-hei-ho, Govt. Hospital, North Manchuria, China.

## LOSS OF HOGS FROM UNKNOWN CAUSE

On December 22, 1916, I answered a hurried call to a farmer's place to see some hogs. This farmer had something over one hundred head of hogs weighing around 225 pounds each. Their ration consisted of ear corn and raw sugar beets. Salt and wood ashes were constantly before them, as was also good, clean, fresh water in abundance.

On this particular morning, the farmer cooked these beets, (they had been frosted)

and fed them to the hogs, he also put out a fresh supply of salt and ashes. He fed the hogs about 8 a. m., and at 12 noon went out and found eleven dead and several lying around.

He was unable to give me any symptoms or any history other than the above. We could see in the pens and runways where the hogs had vomited.

Can anyone tell me whether the death of these hogs was due to eating too much salt or were they poisoned from eating the cooked sugar beets that had been frosted?

Victoria, Ill. R. R. CLAYBAUGH.

## A PECULIAR LAMENESS OR SPASM OF THE GASTROCNEMIUS

I was called to see a mare that was said to be "off feed." Upon examination of the subject, pharyngitis was found to be the cause of the trouble. In the course of about ten days recovery had taken place without complications ensuing. Soon afterward the owner disposed of the animal and in a few days the new owner brought the same animal to me, asking that I examine her because of lameness which involved the right hind leg. No constitutional disturbance of any sort could be found, but a peculiar local disturbance affected the lame leg.

When the animal was caused to walk or trot marked circumduction was evident. The hock was not flexed to any great extent and the type of lameness was mixed. Palpation of the affected parts revealed the fact that the gastrocnemius was almost as dense as stone. This peculiar density affected the gastrocnemius as high as its point of origin and the gracilis seemed affected also. I thought the condition due to spasm of the affected muscles and directed that hot fomentations be employed for awhile and during the intervals between such treatments a stimulating liniment was to be applied. The treatment was kept up for about ten days, whereupon the animal was much improved, although some hardness of the affected parts persisted for three months.

There being no history of injury in this case, I am wondering whether the affection might be due to metastatic infection of some sort.

Redfield, Iowa. R. C. MILLS.

## POTASSIUM IODID AND TINCTURE OF IODIN CURE ACTINOMYCOSIS PROMPTLY

In my first year of practice I was called to see a registered Hereford cow. The history was that there had been flat like swellings in the region of the parotids for about eight months. A veterinarian had given the owner some liniment to apply, but no good came from the application. I found besides the flat like swellings (that looked like swollen parotids) three large abscesses were present and there was difficulty in swallowing that was very noticeable. I opened the three abscesses and inserted iodin packs. I then proceeded to insert a hypodermic needle over the larger of the flat swellings and injected one ounce of tincture of iodin. I also left potassium iodid to be given internally.

About two days later I was called to this place to see a sick colt and the owner said he wanted me to see the cow. I looked at her and found that the tincture of iodin had worked magically in that it had caused a breaking down the wall of the enlargement and a resultant pendulus swelling about the size of a gallon pail. This animal was cast and a six inch incision was made and about three quarts of pus escaped. An iodin pack was inserted and removed next day. Tincture of iodin was applied to the other swelling and the potassium iodid continued and the animal made a complete recovery in a few weeks.

Redfield, Iowa. R. C. MILLS.

## AN AUTO TRIP TO THE MOUNTAINS, THE VACATION OF CHOICE

On the 16th of July, 1916, we packed our tent, bedding and grub box on a trunk rack, fastened the tent poles and a grip on one running board, with the tool box and spade on the other, and the rest of our baggage for four grown-ups and a child in the Ford.

On the morning of the 17th, we started on our trip. With the aid of a road map and the markers, we had no trouble following the Santa Fe Trail to Pueblo. Leaving Ottawa, our first stop was at Emporia, where we had dinner with friends, our last civilized meal till we reached Pueblo, and there dined with friends again. After leaving Emporia, we followed the trail through Newton, Hutchinson, Dodge City and Garden City, cooking our meals over a camp fire and sleeping in a tent. Our appetites, which had been rather puny when we left home, began to pick up after being out a couple of days, and we had no reason to complain of any finicky eaters on the rest of the trip. One of the party suggested that we have five meals instead of three a day.

We traveled through the "short grass" country in Western Kansas and Eastern Colorado, where for miles there were no signs of habitation except the homes of the prairie dogs, but the trail was as smooth as glass and lined with cars coming and going.

We always managed to find camping

places where we had good drinking water and could pick up plenty of fuel. We were usually joined by one or more cars before dark and they would pitch camp also, so we were never lonesome. All of the principal cities in Colorado have camping grounds for tourists, where the city furnishes water and fuel free, and there are often brick ovens built on the camping grounds for the use of the tourist.

The trail led us through Lamar, La Junta and Rocky Ford. Camping one night near Rocky Ford, we experienced our first and only trouble with mosquitoes. We pitched our camp in a hurry that evening because it was threatening rain, and we camped too close to an irrigating ditch. We had been warned before leaving home that we would find mosquitoes grown to full manhood in the irrigated country, so we had taken mosquito netting with us. However, we had to resort to "smudge" to drive the pests from our tent and then put up the netting, and in this way we had a good night's rest.

At Pueblo we visited friends for a couple of days and had a chance to do a little laundrying. One of the disadvantages of the trip, was in not being able, on account of short stops in the cities, to have our laundrying done as often as we would have liked. Another disadvantage was our inability to carry our bathtub with us. The men of the party fared better in this respect than the women, because they did make use of sure-enough bathtubs in the barber shops along the way.

From Pueblo to Colorado Springs, we traveled over some of the best roads on the trip. We camped in one of the public camping grounds at the Springs, and leaving tent and all our belongings, we made several little side trips. Nothing was ever disturbed while we were in any of the public camping grounds. We climbed up to see the Seven Falls and drove up to Manitou, but didn't attempt the drive up Pike's Peak.

From Colorado Springs, we went to Palmer's Lake and from there to Denver. From Denver we hurried on to Cheyenne to be there for the Frontier Day celebration. This alone was worth the cost of the trip to us. There were two thousand people in the tourists' camp at Cheyenne the first night we were there. Before we left, we visited Fort Russell, which was almost deserted at that time on account of the soldiers being on the border. Leaving Cheyenne, we followed a different trail that led us through Fort Collins and on to Loveland, through thousands of acres of cherry orchards, just then loaded with ripe fruit.

From Loveland we went up the Big Thompson Canyon, a distance of thirty-two miles of grand scenery, to Estes Park. Here we camped on the bank of the mountain stream just beyond the Y. M. C. A. buildings. This was as beautiful and wild a spot as one would wish to see, and during the three days we were there, we didn't suffer any with the heat. The second day it began to rain a cold, drizzling rain, much like we have here in the late fall. We wore all the coats and overcoats we had with us and kept the fire burning all day. Neighbors in camp who had been there two weeks, said that was the first bad weather since they had been there. There are several beautiful mountain drives around Estes Park, and it was hard to realize that our friends at home were sizzling while we were making use of winter coats. After a steady rain which lasted twenty-four hours, we started on our way down the mountain, in perfect safety without chains, often splashing through puddles of water. The roads are so sandy, we had no trouble about skidding.

We came down from Estes Park by what is known as the steep drive to Lyons and through Longsmont and back to Denver. In Denver we camped in the city park and attended the Colorado Day celebration. Leaving Denver we started on our homeward journey. We came back by way of Colby and followed the Rocky Island highway through Northern Kansas, passing through Norton and Seneca, and cutting across to Topeka and from there back to Ottawa.

We were gone twenty-two days, traveled almost two thousand miles and enjoyed every minute of the trip. The total expense for the five of us was $117.00, and this was divided equally among the two families, making it a very cheap outing. We kept a record of all expenses for ourselves and car.

We came back so refreshed and fattened up that we were able to stand about a month more of Kansas heat without being prostrated. Our only regret was that we could not have kept on going west through Yellowstone Park and on to California as a great many were doing.

I should like to add that Estes Park appealed to me as a great place for an A. V. M. A. meeting. Doctor Jensen, of Kansas City, has some sound ideas along this subject that I hope to see adopted.

Ottawa, Kans. L. P. GENTRY, D. V. S.

## "AIR TREATMENT" FOR MAMMITIS

The case reports of C. L. W., on "Air Treatment" for mammitis prompts me to relate my results of experimentation with that method. In the certified milk herds

mammitis ordinarily receives prompt attention. The best success was obtained with mild inflations every three or four hours, three inflations were usually sufficient. A saline purgative was administered and the infected quarters stripped and massaged before inflation. Results were not as good when the intervals between inflation were longer. Perhaps had I used oxygen recovery might have been more satisfactory. Subacute and chronic cases which produced a thin watery serum, did not become normal.

ROYAL KLOFANDA, D. V. M.
Brillion, Wis.

## A CASE OF PARAPLEGIA

About 4:30 one afternoon I received a call to a cow that "slipped and fell down." I arrived about 5 o'clock to find a 13-year-old cow, within a month of parturition, in fair condition, lying down at ease, apparently in the best of health. The temperature was normal. She had been eating almost up to the time of attack. After falling she crawled along the floor when I urged her and tried to aid with the flabby tail, but the limbs merely spread laterally. Something prompted me to try a tablet of digalen. I instructed plenty of bedding and quietness and went home to prepare a mixture of one ounce each of fluid extract, nux vomica and formin and water q. s. to make twelve ounces, to be given in ounce doses every three hours. This mixture I have found very satisfactory in acute arthritis following parturition. It is pharmaceutically and perhaps chemically incompatible, but it does the work. One dose of this was given. At eight o'clock, the cow was found up and roaming around the barn as though nothing had happened.

Did the digalen or nature effect the cure?

Brillion, Wis. ROYAL KLOFANDA.

## BELIEVES PERIODIC OPHTHALMIA INHERITED FROM THE DAM

I was surprised to learn from the March Journal that the editor had never seen a case where the mother transmitted periodic ophthalmia to the offspring. I have been in practice a long time, and I can cite a great many cases that will show that the disease may be transmitted through the dam as well as the sire, e. g.:

Charles Fort, of Waukon, Iowa, had a mare that went blind from periodic ophthalmia and afterwards produced seven colts; all of them went blind before they reached the age of six years.

George Smith, of Burr Oak, Iowa, had a mare that went blind from the same disease and all the five colts she had afterwards went blind before they reached the age of six years.

Recently I was called to see a horse which the buyer would not accept, and I found a case of periodic ophthalmia. The owner said the mother of the horse has been blind four years.

Ami Smith, here in Decorah, had a stallion, Captain Kid, that contracted the disease, after which all his colts went blind or had bad eyes.

I can mention more cases if necessary that have come under my own observation.

Decorah, Iowa. B. HARMON.

## MY FIRST EXPERIENCE WITH LOBELIN SULPHATE

This case was a grey gelding seven years old, weight 1,050 pounds, one of a pair that have won first in the gentlemen's driving class at the South Dakota state fair for two years. This horse has a quarter cross of thoroughbred blood and is naturally of a very nervous temperament. The pair was in harness to a sleigh driven up to the stable to have me look at this horse. He appeared to be stiff and sore. Tetanus was well enough developed to need only a glance to recognize it. The animal had calked himself quite badly fourteen days before. The driver had noticed the horse was off the day before and this morning he was hard to bridle but he thought nothing about it as the horse was at times naturally fussy. I had him taken out of the harness and placed in a dark box stall. His neck was very stiff, he walked quite stilty, the tail and nose were elevated, the nostrils widely dilated; he was nervous, but the jaws had not set.

I gave him lobelin sulphate, one-tenth grain at once; he was thirsty and I gave him two-thirds of a pail of water with eight ounces of sulphate magnesia dissolved in it. He drank it all. I had 1,500 units of anti-toxin in my case; I administered that and followed in an hour with 5,000 units more which was all there was in town. Repeated the lobelin sulphate in one-twentieth grain doses every three hours until I had used five doses. By this time all nervous symptoms had disappeared and the muscles had relaxed in his neck. The next day the jaws were set, the neck muscles hardened, the tail elevated and was drawn to one side. The animal was very stiff all over. I had wired for anti-toxin, but on account of snow blockades could not get it. I increased the lobelin to one-tenth grain every four hours, and gave one dram dilute hydro-cyanic acid hyperdermically and followed with one-half dram in four hours and another one-half dram in eight hours. The following day the jaws relaxed, and I

gave four doses of lobelin sulphate, one-twentieth grain each, two ounces magnesia sulphate in water, one dram calomel in feed. I repeated this treatment on each of the following three days. On the seventh day of treatment the jaws were set again. I doubled the dose of lobelin and repeated the hydro-cyanic acid and got 3,000 units of anti-toxin that evening; gave that the next day. The jaws were now relaxed, the nervousness gone and he could move about some in the stall. More anti-toxin came that evening, and I administered 5,000 units. The ninth day showed marked improvement, I gave four one-twentieth grain doses of lobelin, 1,500 units anti-toxin, two ounces magnesia sulphate, and one dram of calomel. Repeated the treatment the following day. During the next eight days I omitted the anti-toxin and gradually reduced the lobelin, and discharged the patient on the eighteenth day fully recovered and in better flesh than when I began the treatment.

Huron, S. D. E. E. BURDICK.

## HOW TO TREAT CONTAGIOUS ABORTION IN A GRADE HERD

Will someone advise us how to handle contagious abortion in grade herds where the average value of cows does not exceed $75.00? The best thing I have seen so far is the article by Doctor Marshall in the March issue. While he has small confidence in the "average" veterinarian, yet few of us have the opportunity to receive the special instructions he has arranged for his assistants (at public expense). I would be very grateful if he would explain what constitutes the "proper" treatment he mentions. During the past few months we have read a great deal about abortion and the treatment outlined by all the experts will no doubt control the disease but the cost would be excessive for ordinary grade herds. The farms are not properly equipped, the owners have neither time nor inclination nor a proper conception of the meaning of asepsis to attend to the douching and disinfection as outlined by the various authors. Neither would they be willing to pay a veterinarian for a daily trip to the farm. The cost would exceed the benefits. The difference in value of a breeder and a feeder is small. A few months at pasture and a few bushels of corn will make almost any grade aborter worth more in Chicago than her value as a breeder. I mean the beef type we have out here. We have no fancy dairy herds in this community.

A pump and hose for irrigation of these cases in the hands of the average owner would be a positive menace to the herd. Anyone who has practiced in the country knows that unless he especially requests water in a "milk pail" it often comes out in a pail used to water the calves and a pan is usually one the cats drink from. This is no reflection on the intelligence of the farmer either. He simply does not know the danger of infection in these cases and the examples set by some of our "horse doctors" do not enlighten him. When veterinarians get as high as 40 per cent of abcesses from vaccinating pigs, as some in this state do, we surely cannot expect the farmer to understand the necessity of cleanliness and asepsis.

There has been quite a discussion lately regarding flushing the uterus. If the water used is warmer than luke warm better results will be obtained. I do not use a thermometer but have water warm enough to feel hot to the hand. I get prompt expulsion of the solution. The only advantage of flushing the uterus is to get mechanical cleansing or washing and this method seems preferable to siphoning. A few douches of hot salt solution will start normal contractions in a flaccid uterus. I have used this method in both mares and cows for years and have never observed any bad results.

I would not attempt to practice without the Journal. Please give us more of it. It doesn't last long enough. A raise in price would not hurt anyone. Give us more pictures of horse ambulances and up-to-date hospitals, too. They are encouraging. When all our dreams come true we will send in some, too.

W. E. STRIBLING, M. D. C.

Clarence, Iowa.

## AN AUTO TRIP WITH THE FAMILY, A DESIRABLE RECREATION EVEN IN A PROSAIC SECTION

We traveled in a Ford touring car, my wife, baby, seventeen-year-old daughter and myself. Another car of the same make accompanied us and carried a party of the same size. We had a tent, 9x12, and camp outfit consisting of folding cots and pans for cooking.

We made the trip from Anadarko, Oklahoma, to Kansas City, a distance of six hundred miles in two and one-half days. The roads were fairly good. Desirable camping places, however, were not always to be found at camping time. The weather was very warm on the out-going trip, yet we all enjoyed it and agreed that it was preferable to a railroad trip, and the expense was less.

From Kansas City, we made several trips in various directions, the longest being one hundred and fifty miles.

When we camped for the night, we stopped the two cars parallel to each other, about twenty feet apart and stretched the tent in between, tying the tent ropes to the wheels, thus saving the trouble of driving pins in the hard ground. An electric flash light furnished all the light required, other than the light from the camp fire.

For creating an appetite, there is nothing equal to an auto trip, and the dustier, the better. We were gone from home just one month, and in all, the trip covered probably two thousand miles. The total expense including one inner tube, was about $70.00. With good weather, good roads and plenty of time, there is nothing to excel an auto trip with the family along.

Anadarko, Okla. JOSEPH E. NANCE.

## VETERINARY ASSOCIATION RESENTS PURLOINING OF ITS GOOD NAME AND FAVORS "BONE DRY" LEGISLATION.

I observe with some surprise that some organization using our name was mentioned in the March number of the Journal as having held a meeting in Huron. We are an incorporated body which makes the use of our name all the more peculiar.

About four years ago our association took a stand against the state because of certain legislation which placed the graduate on a par with the empiric, and we agreed not to accept any form of state appointments, signing a resolution to that effect to hold until better legislation was obtained for the graduate. Some of our members, despite their signatures to the resolution, broke away and took out deputyships and positions on the veterinary examining board, and were accordingly suspended from our association.

The men who have remained loyal to their principles and to the maintenance of the dignity of our training for our profession will doubtless be surprised and indignant to find our name attached to the group of men who deserted a good cause.

I recall with considerable amusement that one at least of the officers listed in the notice published, was at one time practically thrown out bodily from one of our meetings for intoxication. Most of the older members of that new organization are the perjured and suspended members of our group. We cast no reflections upon the young chaps who have come into the state and joined them unaware of the situation.

Following is the report of the seventeenth annual meeting of our association, the South Dakota Veterinary Medical Association, held at Sioux Falls, January 23rd and 24th.

Several visiting veterinarians addressed the sessions, including Dr. Johnson, of Sioux City, Iowa, and Dr. Dickey, of the B. A. I. Dr. Johnson's talk on hog cholera and its differential diagnosis was pertinent and interesting.

All the members present took part in a discussion on vesicular stomatitis and the prevalence of dourine.

The prospects for better legislation along live stock lines were canvassed.

Consideration was given to a circular letter sent out by state veterinarian Phelps urging our members to fight the bone-dry bill pending in the legislature because of its features preventing veterinarians from writing booze prescriptions. It soon developed that the members were unanimous in the resolution that it would be better to be without this privilege and thereby deprive a large number of conscienceless empirics from making a living by writing booze prescriptions. Dr. Phelps is not a member of the association, so the unanimous resolution was possible.

The last session was given over to a clinic at Dr. McGilvray's hospital, the subcutaneous, intradermal and ophthalmic tests for tuberculosis being demonstrated.

The summer meeting will be held at Lake Kampeska, near Watertown, in July. Camping sports will be the order of the day, but the association looks forward to a good clinic in Dr. Allen's new hospital.

The election resulted in the following officers taking seats for the coming year: President, Dr. H. A. Hartwich, Madison; vice-president, Dr. O. W. Stanley, Sioux Falls; second vice-president, Dr. N. J. Mayer, Mitchell; secretary-treasurer, Dr. S. W. Allen, Watertown.

H. A. HARTWICH, President.

## HOLLINGSWORTH'S PLAN WHOLLY DESIRABLE

I have read the article by Dr. W. G. Hollingsworth of Utica, N. Y., regarding the advisability of caring for our indigent members, and think his suggestion a splendid one. With the large number of progressive veterinarians in the country today, it should be, and I believe would be, a comparatively easy matter to institute a movement of this kind.

Of course, the matter would have to be placed in the hands of one or two capable men with their hearts in their work. Most of us, no doubt, get along all right so long as we are well, but then, one never knows what is going to happen and when that something does happen and we find ourselves "up against it," it surely would be a pleasant thought to know that our profession would help us. But even better

than that, to my mind would be the consoling thought that those dependent upon us would not come to want because of our misfortune. A fund of this kind would be better than any insurance and it would cost less.

Let us all get together on this and go into it with vim and enthusiasm. Yours for a fund for worthy dependent veterinarians and their families.

St. Peter, Minn. R. A. DEAN.

## TENTH ANNUAL MEETING OF ALABAMA VETERINARIANS

The tenth annual meeting of the Alabama Veterinary Medical Association met in the Veterinary College of the Alabama Polytechnic Institute, Feb. 23 and 24, 1917.

Dr. W. W. Webb read a paper on Veterinary Problems. He discussed a number of general problems that confront the average practitioner. Dr. F. P. Wolf, of Mobile, considered the question, "How to Improve the Milk Producing Dairies of Alabama." Closer co-operation of the inspector and producer should bring about improvement in the milk supply. Dairymen should be taught how to produce clean, pure milk. An inspector should teach as well as enforce laws. Vesicular Stomatitis was reviewed briefly by Dr. D. A. Piatt. This led to some remarks by the members present on the method of making a differential diagnosis. Hemorrhagic Septicemia by Dr. D. J. Meador and Corn Stalk Disease, by Dr. E. D. King, were discussed together. Dr. White, of Tennessee, contended that corn stalk disease was mechanical in nature, being caused by dry, hard irritating stalks and that it was not a type or form of hemorrhagic septicemia. Others seemed to think both were due to the Bacittus bovisepticus.

A general discussion of contagious abortion was led by Dr. C. A. Cary, who reviewed the more recent literature of Hess, Bang, Williams, Schroeder, Eichhorn and others. That there is confusion and conflict of ideas and theories, and that, much is to be done before safe and rational prevention and cure can be assured, there is no doubt. Let the federal Bureau of Animal Industry concentrate its money and efforts and establish or determine more definite facts about the cause, the modes of transmission, the pathology, the lesions and the prevention.

Dr. Geo. R. White gave the differential lesions and characteristics of hog cholera, cotton seed meal poisoning, salt poisoning and lye poisoning. Diagnosis of anthrax from a laboratory standpoint was reviewed by Dr. R. S. Sugg. He suggested that an ear, or dried blood smears on glass slides or on clean paper could be sent to the laboratory for diagnostic use. Never send blood in bottles or soft tissues because the anthrax bacterium is often destroyed in such liquid or tissues and both are liable to be broken in the mail or in transit. The ear or blood exposed to air permits the formation of spores and thus preserves the living cultures, and inoculations and a positive or negative diagnosis are then possible. The diagnosis must depend upon stains, cultures and inoculations. It is unsafe to make a diagnosis from a microscopic examination of a stained slide smear. It is well to note that Alabama does not permit the use of anthrax vaccine until an authoritative bacteriological diagnosis is made. Anthrax serum may be used while such diagnosis is being made.

Dr. F. P. Caughman, of Columbia, S. C., reported: (a) Questionable case of parturient paresis that failed to recover by the ordinary treatment. (b) Mule with hemorrhage from the bladder following catheterization. The penis became swollen and pendent. The mule died on seventh day revealing on autopsy a blood clot in the bladder, nephritis and enlarged prostate.

Dr. I. R. Cooper reported (a) a case of uremic poisoning in a bull; (b) buckeye poisoning in a hog, and (c) seventeen cases of forage poisoning, five of which recovered. Dr. White did not believe that hogs were poisoned by buckeye because he had seen hogs eat buckeye without showing any toxic symptoms.

Dr. G. C. Bevan reported that he had good results in treating tetanus by giving in the feed one-half ounce of a mixture of equal parts of glycerin and carbolic acid, and also giving every other day one dram of barium chlorid. He also reported a thoracic wound in a colt where a portion of the lung protruded. He replaced the extended lung and stitched up the wound, but the colt died in six weeks from colic.

Dr. I. S. McAdory exhibited (a) the stomach of a mare with a piece of weed extending through the stomach wall. The mare had died of peritonitis. (b) The dilated esophagus of mule. The dilation was located in the posterior portion near the diaphragm. The mule lived some time, being fed through a stomach tube. The mule could not swallow liquids or solids.

Dr. E. D. King reported that he secured recoveries in sore mouth in dogs when he treated the cases in early stages by giving ten grains of thymol on an empty stomach and repeated the dose in two hours following with a dose of salts in six hours. Dr. W. L. Ingram exhibited a photograph showing a mule and the crutch that he used in a metacarpal compound fracture.

He said the mule was making a good recovery. At night, before the banquet, Dr. White gave an illustrated lecture on castration of cryptorchids.

The banquet given by the students of the Veterinary Medical Association was held in Smith Dining Hall. The speakers were numerous, wise and witty. It was a feast of food, fun and reason. Brenner, of the advance, rear and front guard of the AMERICAN JOURNAL OF VETERINARY MEDICINE, talked and toasted to the listening and laughing banqueters. From all points this banquet was a success.

The morning of the 24th was devoted largely to an inspection of the state serum plant and to a more careful examination of the new slaughter house. This house is located in the suburbs of Auburn on a hillside where animals to be slaughtered can walk from the ground into the second story killing floor. The floor space is 20 by 50, with the lower story made of cement and the upper story of brick. The killing floor is made of reinforced concrete. Hoists, killing and bleeding pens, scalding vats, overhead tracks, entrance and exit scales are found on the killing floor. In the lower story are new type rendering tank, engine and storage room. The boiler is located under separate roof. A brick smoke stack 40 feet high stands near the boiler. This plant costs something less than $5,000 without cold storage. Two thousand dollars more would supply cold storage and then such a slaughter house would be fully equipped for taking care of all the slaughtering of any small city of 2,000 to 10,000 people.

The polyclinic was held at the veterinary college. The first case was a two-year-old colt with congenital contraction or shortening of the perforans tendon or muscle in each front limb. The heels were high and the toes short and the deviation from the normal axis occurred at the distal phalanx. The veterinarians present differed some as to method of treatment. Some advised tenotomy, others cutting down the heels and applying toe clips. The owner decided in favor of toe clips and Mr. Schimmel, a senior veterinary student trimmed the foot and applied the tip shoes.

(2) Puncture over the internal superior part of os suffraginis was inspected by Dr. Piatt and Dr. Ingram.

(3) Drs. Kendrick, Bevan and Seibold examined and made a diagnosis of multiple fibroid tumors in left rib region. At first one called it bursatti. Operative treatment was advised.

(4) A clinical and microscopic diagnosis of actinomycosis in a Jersey cow.

(5) An enlarged perforans tendon just above the fetlock of a hind limb was present, having been treated by cold water bandages. Dr. Piatt advised light blister and bandage.

(6) A mule with tetanus was next presented to the veterinarians. This case had existed twenty days or more and was making a good recovery with no other treatment than laxatives and good care.

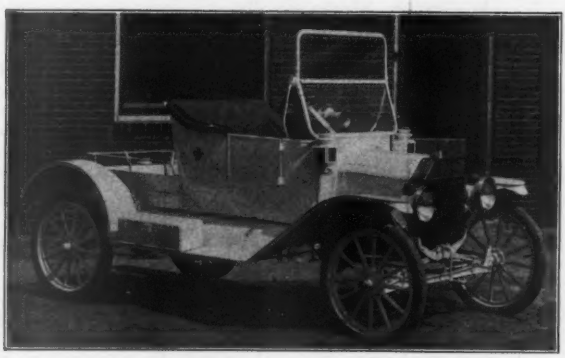
(7) A recovered case of fistulous withers was next exhibited. This case had been treated successfully by inserting Merillat's drainage tube.

(8) Dr. Cary exhibited a large mule that had been operated on for ventral hernia three days prior. The many tailed bandage and cotton dressings were removed and the redressing process done so as to show the method of handling such cases after the hernial operation. The mule exhibited some nasal discharge resulting from the irritation of the chloroform. The absorbent cotton covering the place of operation was saturated with a sero-purulent discharge and there was only a slight rise of temperature. The details of the operation were explained by the operator.

(9) The next case was a mule with pulmonary emphysema, (diagnosis by students).

(10) A one-year-old mule was cast by the Miles method and castrated by Dr. White.

(11) Another mule was cast and castrated by Dr. White. The special point brought out by the operator was the necessity for removing part of the tunica in order to prevent "water bags" that are so



Dr. W. R. Barnard, Belleville, Kansas, improved the appearance of his Ford by painting it a light grey.

often seen in mules castrated without including the tunica vaginalis in the emasculator.

(12) Dr. George R. White castrated a stallion standing in five seconds, counting from the time he grasped the scrotum until the time the testicles were on the ground.

(13) Gray mare with septic fibrous or interstitial mastitis. Dr. F. P. Caughman advised removal of the half involved.

(14) Pointer dog with injured pelvis, the crubal muscles injured and atrophied.

C. A. CARY,
*Secretary.*

## THE WHORLED MILKWEED

(*Continued from page* 304)

Sept. 30. No ill results noted in rabbits from above dosage.

Gave rabbit in pen 16, 20 cc. of water extract intraperitoneally. Gave rabbit in pen No. 17, 10 cc. of alcoholic extract intraperitoneally. In five minutes animal was in the state of tremor, presumably from effect of alcohol in the extract.

Gave rabbit in pen No. 14, 30 cc. of watery extract intraperitoneally. Gave rabbit No. 15, 20 cc. of alcoholic extract intraperitoneally. Two hours later rabbit in pen No. 15 was in a comatose state. Pen No. 17 rabbit dull, but not comatose. Rabbits 14 and 16 normal. The symptoms manifested in rabbits 15 and 17 attributed to effects of alcohol in the extract.

October 4, 1915. Evaporated the alcoholic and watery extracts to dryness and then redissolved the residue of the former in 5 cc. of alcohol and that of the latter in 5 cc. of water. Gave the whole of alcohol extract to rabbit in pen 15, the whole of the water extract to rabbit in pen No. 16. No ill results noticed.

Conclusion:

1. The green milkweed has foliage somewhat resembling the rubber plant (Hymenoxys floribunda), and has been incorrectly called rubber weed.

2. This plant has been looked upon with suspicion because several of its near relatives, in the milkweed family, are known to be poisonous.

3. Some plants are poisonous when eaten green, but not poisonous in the dry state; ex, Kafir corn, cane, Johnson grass, wild cherry under certain conditions.

4. Poisonous qualities have not been found in green milkweed in the dry state.

5. The fact that the plant was positively refused by rabbits and that no poison has been found in it, in a dry state, warrants us in concluding that the green plant is probably not poisonous and that the animals in question probably died from some other cause.

On the other hand circumstantial evidence favoring the toxicity of the whorled milkweed continues to accumulate. Dr. A. P. Drew, of Grand Junction, reported the poisoning of cattle by this plant under circumstances which were all but conclusive. Reports of poisoning were received from Montrose, Grand River, San Luis Valley and Mancos. The strongest evidence probably came from Mancos, where nearly half a flock of eleven hundred sheep, that were driven in from the range, died in twenty-four hours, with symptoms of acute poisoning. Mancos being in a remote district of the southwestern part of the state, the services of a veterinarian were not available and we have no reliable report of symptoms or post mortem findings. The stomach contents of one sheep were sent to the college and seeds of the whorled milkweed were found in sufficient numbers to indicate that this sheep at least had eaten very little, or nothing, but the plant in question.

All cases reported to this office resulted from eating the dry plants in the fall and winter months. The evidence is not conclusive in the absence of scientific investigation, but we feel that it is strong enough to warrant us in strongly suspecting that the whorled milkweed may be a very dangerous poison weed for sheep and cattle.

## NEW VETERINARY ASSOCIATION IN SAGINAW VALLEY, MICHIGAN

The registered graduate veterinarians of Saginaw and Bay Counties, met at Saginaw, Mich., on Thursday, March 1st, and organized the Saginaw Valley Veterinary Medical Association.

An effort is being made to have the veterinarians of the surrounding counties come into the fold and help make this one of the real live wires among associations.

Dr. H. M. Newton, federal veterinarian in charge of hog cholera control in Michigan, and Dr. G. W. Dunphy, state veterinarian, were the promoters of the meeting and were both present to assist us in organizing. Co-operation was the key note of the meeting and marked enthusiasm prevailed.

The purpose of the association is the betterment and advancement of the profession, its members individually and promotion of good fellowship among its members.

The officers chosen were: President, Dr. Wm. Brooks, Saginaw; vice-president, Dr. G. W. Crankite, Saginaw; secretary and

treasurer, Dr. M. P. Hunt, Frankenmuth. Board of Directors: Dr. H. D. Monroe, Pinconning; Dr. George Carter, Saginaw; Dr. Duery, Merrill. Executive Committee: Dr. J. H. Donald, Bay City; Dr. C. M. Culbert, Chesaning; Dr. John Russell, Saginaw.

M. P. HUNT,
*Secretary and Treasurer.*

## POISONING FROM OAKS

*(Continued from page 324)*

dearth in England and France acorns were boiled and eaten by the poor as substitutes for bread and the *Q. Esculus* is still used in southern Europe. The inner layers of the black oak contains the quercitron of commerce which is used by dyers. The crystalline principle is quercitrin which occurs to the extent of eight per cent. It is possible that this substance is broken up in some way to produce an injurious effect.

May I suggest that in cases of poisoning of this kind one should have the material to examine. I hope Dr. Foley and Dr. Fredenburg will send specimens to us when the time comes.

"Lameness of the Horse," by Lacroix, is just the book for the practitioner who wants a review of two or three subjects at once.

Burlington, N. C.
J. P. SPOON, M. Sc., D. V. S.

## TRI-COUNTY VETERINARY ASSOCIATION

The Tri-County Veterinary association met at Connersville, Ind., February 14th at the commercial club rooms with a good attendance of veterinarians. There was quite a discussion on hog cholera and other diseases. A number of new members joined the organization, which now numbers about twenty-six veterinarians. The next meeting will be the second Wednesday in March at Liberty, Ind. As it extends along the Ohio line, a number of veterinarians in Ohio joined the association.

The following veterinary inspectors of the Bureau of Animal Industry were elected honorary members: Drs. O. A. Maguire, S. E. Olson, R. N. Mead, I. K. Atherton, D. H. Miller.

The object of the association is to protect and promote the professional interest of its members; to promote good fellowship in the association; to encourage the enactment and enforcement of uniform laws and regulations relative to veterinary practice and the control of animal diseases. A number of papers will be read and discussed at the next meeting.

Richmond, Ind. Geo. G. Ferling, V. S.,
Secretary-Treasurer.

G. R. TINKHAM General Manager J. H. COPENAVER D.V.M., Laboratory Supervisor

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## WATCH FOR THIS CROOK

A slender man, five feet, eleven inches tall, thirty-two years of age, medium dark complexioned, military bearing, claiming to have been a farrier in the army and to have lived in Kentucky and to be familiar with racing interests in Jaurez, Mexico, is traveling about the country, cashing fraudulent drafts and checks and stealing veterinary instruments. Watch for him.

His plan of operation is to come into a town professing to be a specialist on lameness and to attempt to rent stalls from veterinarians and horseshoers in which to treat his prospective cases. He then procures an introduction to druggists, from whom he purchases materials for liniments, having them sent to the veteriarians' or horseshoers' places, and pays with checks for considerably more than the amount of the bill, getting the difference in money. To pay his rent and board in advance, he cashes drafts on his new friends' introductions at banks and is seen no more. Later it is discovered that pocket instrument cases and even dental rolls are missing.

He is a fair horseman and makes himself very useful about a barn or veterinary hospital. His fad is "seemoid" (sesamoid) lameness, about which he talks continually.

If any reader sees him, kindly notify this office, and we will pass the information to those who are exceedingly anxious to meet him again.

## BLACKLEG VACCINE NOT CONDEMNED.

I note in the report of the Missouri Valley Veterinary Association published on page 254 of the April issue of the American Journal of Veterinary Medicine that I am quoted as saying:

"The government is sending out blackleg vaccine in its present form because it is used in large quantities and further because it is readily administered by the stockman himself. The results, however, are not satisfactory because it is impossible to standardize spore vaccine in its present form and give an accurate dose to each animal."

It was not my intention to convey the impression that results from government vaccines are not satisfactory, but I think perhaps what I said or at least intended to say was that the results are not "entirely satisfactory."

I am quite well aware of the fact that blackleg vaccine both in powder and in pellet form has always given very good results, and no doubt the stock owners have been saved millions of dollars from its use. Furthermore, I fully realize that blackleg vaccine is so well established on account of its effectiveness that it would be folly to condemn the product. What I desired to bring out was the fact that this vaccine represents a crude product since its correct standardization in the present form is impossible.

Pearl River, N. Y. A. EICHHORN.

## SUPERFECUNDATION IN A FIFTEEN-YEAR-OLD PRIMA PARA MARE

A thorough-bred mare, fifteen years old, bred for the first time on April 2, 1916, served again on April 27, 1916, delivered twin colts, dead, March 2nd of this year. One colt was fully developed, the other was undersized. Delivery easy. Mare is as well as she ever has been. The two conceptions at the mare's age are to me, very interesting. A. S. WILLIAMS.

Marysville, Cal.

Dr. R. D. Parrish has purchased the location and taken over the practice of the late Dr. D. O. Kinsely, of Topeka, Kan. Dr. Parrish was formerly in the employ of the state live stock sanitary commission.

Dr. Whitfield Gray, of Newton, N. J., while driving his car through a stretch of wood struck a wild deer that was crossing the road and knocked the animal unconscious. Dr. Gray treated the animal's bruises and administered a restorative and in half an hour the deer got up and walked away.

Dr. W. G. Strothman of College Corner, Ohio, vaccinating a four-weeks-old pig. The three-year-old daughter of the owner of the pig brought the little porker up to Dr. Strothman and asked him to vaccinate it.

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Dr. M. J. Enlow, formerly of Haviland, Kan., purchased the residence and hospital of Dr. McClure, at Pratt, Kan., February 14th.

Dr. Chester Graham, who was graduated from the Kansas City Veterinary College this spring, has located for practice at Cuba, Ill.

Dr. M. R. Trumbower, of Monett, Mo., is reported to have recovered from a long and serious illness, although his eyesight is said to have been affected, perhaps permanently.

Wisconsin is planning an active campaign for the next two years against tuberculosis in cattle. Cattle tested during 1914 and 1915 in the southern end of the state showed 6.6 per cent as reacting, while in 1915 and 1916 the reactions had increased to 8.6 per cent. Hogs are seriously affected by the disease. In two of the leading packing plants in Milwaukee, it has been found that 15 to 25 per cent of the hogs killed there, are affected with tuberculosis.

A $3,000 bull owned near Letcher, S. D., died after veterinary aid had proved unavailing, and autopsy showed the cause of death to have been a ten-penny nail in the animal's stomach.

Sixty students of the animal husbandry class of the University of Illinois, made a tour of Armour & Co.'s packing plants at Chicago, April 5th. The students also listened to a lecture by Dr. H. B. Rafensburger of the federal inspection service, who explained meat inspection as it is done at a great plant like Armour's.

The *Hood River Glacier,* Hood River, Ore., of March 29th, contains an extensive writeup of Dr. M. E. Welch, of that city. The doctor, who is now 61 years of age, has had a varied career, starting in as a circus boy when nine years old, afterwards becoming a jockey, riding thoroughbreds and then a driver of trotters. He rode and drove many famous horses in the good old racing days. Later he went to prospecting in California where he was for a time the companion of Robert Louis Stevenson, the well known English novelist. Stevenson was out there for his health and with his wife, lived in an abandoned bunk house of the old Calistoga mine in Napa county, according to Dr. Welch. He says that the great author was very fond of whiskey and onions, also of wine, and protested against the chemical dilution of the latter beverage. When Stevenson talked he kept a pad before him and in the midst of the conservation he would stop and jot down some pleasing thought. He spoke with a broad Scotch accent, and the doctor adds that the illustrious author did not seem to fancy the Californias, but said, "Let me have the Samoan Islands; that's the place where a fellow can do as he pleases without regard for any conventions." In the kitchen of this mining cabin, Stevenson worked on his literary masterpieces, his long fingers fairly flying over the sheets of paper, and as each sheet was finished it was thrown on the floor, and his wife was kept busy picking up and putting together his manuscripts. No doubt many of the world famous works of Stevenson had their inception in this obscure retreat under the very eyes of Dr. Welch, and the doctor's reminiscences throw an interesting sidelight on the human attributes of the man who since became recognized as a master of English literature. Stevenson finally died of tuberculosis and his effort to combat this malady was one of the reasons for his sojourn in California. Dr. Welch relates that he heard Stevenson remark: "They say I'm sick; up here for consumption. Bah! a man's not going to have any consumption as long as he has any of this," and he would pat fondly a bottle of whiskey.

Twelve graduates of the Ontario Veterinary College have obtained commissions in the Canadian army veterinary corps and will take up their duties overseas. They are: E. L. Brown, C. T. Beavan, W. C. Galbraith, A. D. McAlister, A. W. Hopkins, W. L. Powill, D. J. McClellan, A. B. J. Score, A. C. Wagner, J. Hogan, H. Spearman and W. G. Walks.

Dr. A. L. Van Gorden, of Omaha, Neb., was arrested March 19th, accused of selling "dope" to drug addicts.

A meeting of Knox county and district veterinarians was held at Vincennes, Ind., March 23rd. The prevention of animal diseases was the prevailing topic discussed.

Dr. Daniel D. Lee, of Boston, Mass., died at his home, March 22nd. Dr. Lee was born in Charlestown, March 2, 1865. He was a graduate of the Harvard Veterinary School in the first class and afterwards became instructor in anatomy at that institution. In 1890 he founded the Boston Veterinary Hospital, of which he was the head until his death. He is survived by his wife, a son and five daughters.

# Is a Packing House or Stock Yard District an Ideal Location for a Biological Laboratory?

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## Fort Dodge Serum Company

**Fort Dodge, Iowa**

**Des Moines, Ia.** **Lansing, Mich.** **Sheldon, Ia.**

David T. Benson, of Harford county, Maryland, applied in the city court of Baltimore, March 23rd, for a writ of mandamus requiring the state veterinary medical board to grant him a license to practice veterinary medicine. He alleged that he was entitled to the license under the law as he was a graduate of a Canadian veterinary school and had practiced more than ten years before the law was passed.

---

The Northwestern Iowa Veterinary Association held its semi-annual meeting at Sioux City, March 28th. A clinic was conducted by Dr. H. E. Bemis, of the state college, in the hospital of Dr. J. M. Lichty. The members were guests at a noon luncheon given by the Purity Serum Co., and the Sioux City Serum Co. A round table discussion was held at the Commercial club in the evening.

---

Dr. Morgan, of Cashton, Wis., lost his entire outfit of veterinary instruments and drugs, valued at $200, in a fire that destroyed a whole block of frame buildings in that town, March 19th.

---

Dr. H. G. Bodle, state veterinarian, of Idaho, has been reappointed for a term of two years by the state live stock sanitary board.

Dr. T. I. Mitchell, of Mt. Vernon, Iowa, who besides being a veterinarian, specializes in fine grades of stock, added a dairy department to his business by taking over a local milk route, April 1st.

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Dr. J. C. Barbee and his parents moved their household goods from Chicago to De Kalb, Ill., across the country in two large vans, March 27th. Dr. Barbee recently opened his office for practice at De Kalb.

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Dr. W. S. Gimper, of the Pennsylvania State Live Stock Sanitary Board, caused the arrest of two butchers at Coal Center, Pa., on the charge of selling meat from a diseased cow.

---

Dr. John Rome, of Germantown, Md., lost his veterinary hospital and stable in a fire, March 23rd, entailing a loss of about $2,000, which, however, was covered by insurance.

---

Dr. George Wessels, has opened an office for practice at Creston, Iowa.

---

Stanley county, South Dakota, has been divided into four districts by the state live stock sanitary board with a rider in charge of each district whose duty it is to instruct the owners in regard to the burning, burial


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Dr. T. W. Johnston, 646 N. Main St., Dayton, Ohio.
Dr. G. H. Conn, 311 Croghan St., Fremont, O.
Dr. A. G. Wadleigh, La Junta, Colo.
Dr. N. J. Mayer, Mitchell, So. Dak.
Dr. W. L. Edwards, Visalia, Calif.

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or proper disposal of carcasses and to report all cases of dead animals to the board of health.

---

Dr. O. E. Dyson, state veterinarian of Illinois, spoke on hog cholera control before the Illinois Agricultural association at its annual meeting at Peoria, Ill., March 31st. He outlined and discussed four factors as entering in such control; namely, controlling the movement of cholera hogs; suppressing outbreaks; co-operation of breeders; official control, such as was exercised in suppressing foot-and-mouth disease.

---

Dr. Clyde McLaughlin, who graduated this spring, has established himself in practice at Melvin, Ill.

---

Fuzz, the oldest cat in Wichita, Kan., is dead. He is said to have been 21 years old and held the championship in his district as a rat catcher and fighter.

---

The American Humane Society of Albany, N. Y., and the American Red Star Animal Relief Society have entered a campaign to organize a corps of volunteer veterinarians, blacksmiths and grooms to be placed at the disposition of the government in the war with Germany.

---

Dr. Hart, of Winchester, Ind., has turned his practice over to his partner, Dr. W. J. Kiff, and will devote his time exclusively to the business of the fertilizing company with which he is connected.

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Veterinarians of the state department of agriculture have reported that hog cholera prevails in Monroe and Greenbrier counties, West Virginia.

---

Dr. Orville E. McKim, of New York City, is the author of a series of interesting articles that appeared in the *Chicago Evening American* during April, describing his experiences in the war zone while engaged in conducting horse transports for the Allies. He was in charge of 1,200 horses on board the steamer Georgic when she was sunk by the German raider and he was taken to Germany on the Yarrowdale together with several other Americans and held prisoner until released by orders of the United States government.

---

Dr. Otto G. Noack, aged 51 years and 8 months, died of a hemorrhage of the bowels at Reading, Pa., March 28th. While testing cattle three weeks prior to that time,

F. J. RATHMAN
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J. M. CORY
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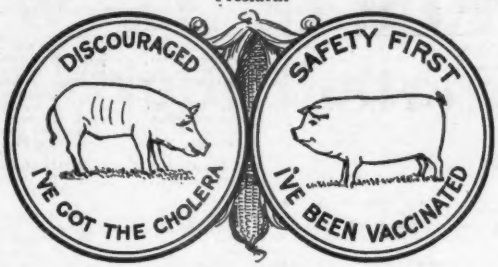


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## ASSOCIATION MEETINGS

The information given below is up-to-date and has been furnished by the secretaries of the various associations listed. Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

| Name of Association | Date of Meeting | Place of Meeting | Secretary |
|---|---|---|---|
| Alabama Vet. Med. Assn. | ..... | ..... | C. A. Cary, Auburn, Ala. |
| Alumni Assn., Col. of Vet. Med., O. S. U. | ..... | Columbus, O. | W. R. Hobbs, O. S. U., Columbus, O. |
| Alumni Assn., N. Y. State Vet. College | ..... | New York | P. K. Nichols, Port Richmond, N. Y. |
| Alumni Assn., U. S. Col. Vet. Surg. | April 14, 1917 | Washington, D. C. | Chas. M. Mansfield, 1344 Newton St., Washington, D. C. |
| American Vet. Med. Assn. | Aug. 20-23, 1917 | Kansas City, Mo. | L. A. Merillat, 1827 Wabash, Chicago. |
| Arkansas Vet. Med. Assn. | ..... | Clarksdale, Miss. | R. M. Gow, Little Rock. |
| British Columbia Vet. Assn. | Sept. 21, 22, 1917 | Penticton, B. C. | Kenneth Chester, New Westminster, B. C. |
| B. A. I. Vet. Assn. of So. Omaha | 4 times a year. | So. Omaha, Neb. | J. W. Giffee, c/o B. A. I., So. Omaha |
| California State Vet. Med. Assn. | June 13, 14 | | |
| Central Canada Vet. Assn. | 3rd week Jan. 1918 | San Francisco, Cal. | F. M. Hayes, Davis, Cal. |
| | | Ottawa, Ont. | A. B. Wickware, Experimental Farm, Ottawa. |
| Central N. Y. Vet. Med. Assn. | Last week in June and Nov. | Syracuse, N. Y. | W. B. Switzer, Oswego, N. Y. |
| Chicago Vet. Society | 2nd Tues. of month | Chicago, Ill. | A. A. Leibold, 4515 N. Robey St., Chicago |
| Colorado Vet. Med. Assn. | ..... | Denver, Colo. | I. E. Newsom, Ft. Collins, Colo. |
| Connecticut Vet. Med. Assn. | ..... | Hartford, Conn. | A. T. Gilyard, Waterbury, Conn. |
| Eastern Iowa Vet. Med. Assn. | Dec. 13 | Muscatine, Ia. | Jno. Tillie, Muscatine, Ia. |
| Genesee County Vet. Med. Assn. | ..... | | W. J. Houden, Flint, Mich. |
| Genesee Valley Vet. Med. Assn. | July | Rochester, N. Y. | J. H. Taylor, Henrietta, N. Y. |
| Georgia State Vet. Assn. | Sept. 18, 19, 1917 | Columbus, Ga. | Peter F. Bahnsen, Capitol Bldg., Atlanta. |
| Hudson Co. Vet. Practitioners' Club | Monthly | Jersey City, N. J. | B. D. Blair, 783 Montgomery St., Jersey City, N. J. |
| Idaho Assn. of Vet. Graduates | ..... | Boise, Idaho | C. V. Williams, Blackfoot, Idaho. |
| Illinois State Vet. Med. Assn. | July 18, 19 | East St. Louis, Ill. | L. A. Merillat, 1827 Wabash Ave., Chicago. |
| Illmo Vet. Med. Assn. | April, 1917 | Collinsville, Ill. | L. R. McKinley, Freeburg, Ill. |
| Indiana Vet. Med. Assn. | ..... | Indianapolis, Ind. | Geo. H. Roberts, Indianapolis, Ind. |
| Iowa Vet. Med. Assn. | ..... | Ames, Iowa | H. B. Treman, Rockwell City, Ia. |
| Kansas Vet. Med. Assn. | ..... | Wichita, Kan. | J. H. Burt, Manhattan, Kan. |
| Kentucky Vet. Med. Assn. | June 20-21, 1917 | Shelbyville, Ky. | D. E. Westmorland, Owensboro, Ky. |
| Keystone Vet. Med. Assn. | 2nd Tuesday of month | Philadelphia | L. B. Davis, 857 E. Girard, Philadelphia. |
| Lake Erie Vet. Med. Assn. | 1st Tuesday in Dec. | Norwalk, O. | N. D. Backus, Elyria, O. |
| Los Angeles Vet. Med. Assn. | 3rd Wed. of month | Los Angeles | J. A. Dell, 16th & Pacific, Los Angeles. |
| Maine Vet. Med. Assn. | April 11 | Bangor, Me. | M. E. Maddocks, Augusta, Me. |
| Manitoba Vet. Assn. | ..... | Winnipeg, Man. | W. Hilton, 275 James St., Winnipeg. |
| Massachusetts Vet. Assn. | 4th Wed. each month | Worcester in Sept.; Boston rest of year | E. A. Cahill, Boston, Mass. |
| Michigan State Vet. Med. Assn. | 1st Tues. & Wed. after 1st Mon. in February | Lansing, Mich. | W. Austin Ewalt, Mt. Clemens, Mich. |
| Minnesota State V. M. Assn. | 2nd Tues. & Wed. Jan. | St. Paul | G. Ed. Leech, Winona, Minn. |
| Mississippi State Vet. Med. Assn. | January 8-9, 1918 | Meridian, Miss. | E. S. Norton, Greenville, Miss. |
| Mississippi Valley Vet. Med. Assn. | ..... | Galesburg, Ill. | W. Lester Hollister, Avon, Ill. |
| Missouri Valley Vet. Assn. | ..... | St. Joseph, Mo. | R. F. Bourne, 1336 E. 15th, Kansas City. |
| Missouri Vet. Med. Assn. | Last week in July | Neosho, Mo. | C. D. Folse, 1336 E. 15th St., Kansas City |
| Montana Vet. Med. Assn. | Sept. 26-27, 1917 | Helena, Mont. | A. D. Knowles, Missoula, Mont. |
| Nat'l Assn. B. A. I. Employees | 2nd Mon. in Aug., 1917. | Omaha, Neb. | S. J. Walkley, 185 N. W. Ave., Milwaukee. |
| Nebraska Vet. Med. Assn. | 2nd Tues. & Wed. in Dec. | Lincoln, Neb. | S. W. Alford, Lincoln, Neb. |


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**Major T. P. Spilman, Manager Dr. G. H. Gillette, Chief Veterinarian**

| Name of Association | Date of Meeting | Place of Meeting | Secretary |
|---|---|---|---|
| New York State Vet. Med. Society | July 25, 26, 27 | Brooklyn, N. Y. | C. P. Fitch, Ithaca, N. Y. |
| North Carolina Vet. Med. Assn. | June 26, 27, 1917 | Charlotte, N. C. | J. P. Spoon, Burlington, N. C. |
| North Dakota Vet. Assn. | July, 1917 | Fargo, N. D. | W. J. Mulroony, Havana, N. D. |
| Northeastern Indiana Vet. Assn. | | Ft. Wayne, Ind. | R. M. Boyd, Avilla, Ind. |
| Northwestern Ohio Vet. Med. Assn. | Feb. 21 | Toledo, O. | Paul E. Wood, Ottawa, Ohio. |
| Ohio State Vet. Med. Assn. | Jan. 10, 11, 1918 | O. S. U. Columbus, O. | F. A. Lambert, care O. S. U., Columbus |
| Ohio Valley Vet. Med. Assn. | July | Oakland City, Ind. | C. S. Henry, Terre Haute, Ind. |
| Oklahoma State Vet. Med. Assn. | May 3, 4 | Oklahoma City | R. C. Smith, Enid, Okla. |
| Oregon Vet. Med. Society | June, 1917 | Probably Salem, Ore. | B. T. Simms, Corvallis, Ore. |
| Pennsylvania State Vet. Med. Assn. | | Harrisburg, Pa. | E. H. Tunker, 3244 N. 16th, Philadelphia |
| Rhode Island Vet. Med. Assn. | 2nd Tues. Jan. | | U. S. Richards, Woonsocket, R. I. |
| Schuylkill Valley Vet. Med. Assn. | June 20 | Reading, Pa. | C. R. Pottsiger, Reading, Pa. |
| South Dakota Vet. Med. Assn. | July | Watertown, S. D. | S. W. Allen, Watertown, S. D. |
| Southeastern States Vet. Med. Assn. | | Atlanta, Ga. | G. A. Roberts, West Raleigh, N. C. |
| Southern Aux. Cal. State Vet. Med. Assn. | | Los Angeles | J. A. Dell, 16th & Pacific, Los Angeles |
| S. W. Michigan Vet. Med. Assn. | January, 1918 | Niles, Mich. | L. A. Minter, Niles, Mich. |
| Tenn. Vet. Med. Assn. | Nov., 1917 | Columbia, Tenn. | F. R. Youree, Lebanon, Tenn. |
| Texas Vet. Med. Assn. | | Not decided | E. M. Wiggs, Greenville, Texas. |
| Tri-County Vet. Med. Assn. | March 14 | Liberty, Ind. | Geo. G. Ferling, Richmond, Ind. |
| Twin City Vet Med. Society | Once a month | St. Paul | C. C. Palmer, St. Paul, Minn. |
| U. S. Live Stock Sanitary Assn. | | Chicago | H. S. Ward, St. Paul, Minn. |
| Utah Vet. Med. Assn. | | Logan, Utah | E. P. Coburn, Brighton City, Utah. |
| Veterinary Assn. of Saskatchewan | | Regina, Sask. | R. G. Chasmar, Hanley, Sask. |
| Vet. Med. Assn. of New Jersey | 2nd Thurs. in Jan. | Trenton, N. J. | E. L. Loblein, New Brunswick, N. J. |
| Vet. Med. Assn. of N. Y. City | 1st Wed. ea. mo. except July, Aug., Sept. | New York City | R. S. MacKellar, 351 W. 11th St., N. Y. |
| Vet. Med. Assn. of Geo. Washington Univ. | 1st Sat. each month | Washington, D. C. | C. W. Rippon, 2115 14th St., N. W. Washington, D. C. |
| Vet. Med. Society Wash. State College | 1st and 2nd Tues. ea. mo. | Pullman, Wash. | Claude Holden. |
| Virginia State Vet. Med. Assn. | July 12, 1917 | Norfolk, Va. | W. G. Chrisman, Blacksburg, Va. |
| Washington State Vet. Med. Assn. | June, 1917 | Pullman, Wash. | Carl Conier, Bellingham, Wash. |
| Western N. Y. Vet. Med. Assn. | 4th week, June, 1917 | Buffalo, N. Y. | F. F. Fehr, 36 Prospect Ave., Buffalo |
| Wisconsin Vet. Med. Assn. | | Madison, Wis. | W. A. Wolcott, Madison, Wis. |
| York Co. Vet. Med. Society | 1st Tues. after 1st. Mon. of each month | York, Pa. | E. S. Bausticker, 325 Newberry, York, Pa. |

he caught a cold from which his fatal illness developed. He was born in Heilsberg, Germany, and graduated from the Berlin Veterinary College and the Berlin Gymnasium. He came to America thirty years ago and established an office at Reading, which he maintained up to the time of his death. Dr. Noack could speak seven languages fluently and was often called upon to act as interpreter. He was a member of several lodges and political organizations and of the A. V. M. A. and Schuylkill Valley Veterinary Association, which he helped to form. He received the degree of fellow from the United States College of Veterinary Surgeons, Washington, D. C. He was an authority on municipal matters and for fifteen years


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Fig. 1764

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**IN CHARGE**

was chairman of the Fourth Ward Republicans, a prominent member of the Northeastern Republican League, in 1912 being a state delegate and in 1914 a national delegate from Reading. He was local agent for the state live stock sanitary board for several years. Dr. C. J. Marshall, state veterinarian, stated that the services of Dr. Noack were invaluable. During the foot-and-mouth disease outbreak, he had charge of a large district and the state and United States government officials assigned to that territory worked under his instructions. He is survived by his widow, a daughter, one son, two brothers in Germany and two brother-in-laws, one a veterinarian, Dr. F. H. Snyder, of Philadelphia.

---

Rabies infection in a herd of pure-bred Holsteins near Jamestown, Mich., led the owner on the advice of Dr. W. J. Rooks, of Zeeland, to have the Pasteur treatment administered to the cattle. The cost was $25 a head, but the cows were worth about $300 each. The owner's dog had become rabid and bitten the cattle, and after three of the cows developed the disease and had to be shot, the treatment of the rest was decided upon.

---

Dr. X. G. May, of Fort Smith, Ark., has been appointed a member of the state veterinary examining board by the governor to succeed Dr. E. W. Temple, of El Dorado, whose term expired.

---

An epidemic among the citizens of Galesville, Wis., occurred during the early part of March. It was first thought to be grip, but when the cases multiplied and there were a number of deaths, the state board of health was called upon, and Dr. Rosenow, the famous bacteriologist of the Mayo Hospital, also joined them in the investigation. The milk supply from six cows was found to be responsible for the disease, with which 200 people in the village were afflicted. The malady was said to be a form of streptococcus infection. The symptoms include those of sore throat, swelling in the neck and high fever. The only symptom shown by the infected cows was that of garget, and it is stated that often this may be so slight that the infection may not be discovered for some time except by a microscopic examination of the milk. Pasteurization of the milk is held to be the only insurance against transmitting the disease to human beings. Dr. Claussen, of the state veterinary department, had charge of investigating the cattle in the neighborhood and ordered the six infected animals killed.

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| 1,500 units in syringes | .90 |
| 3,000 units in syringes | 1.75 |
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Four 4-oz. bottles for liquids, glass stoppers with screw top.

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### MANITOBA VETERINARIANS MEET

The annual meeting of the Veterinary Association of Manitoba was held at Winnipeg, February 15th. Among the contributors to the program were: Major (Dr.) S. Robinson, president of the association; Dr. Gordon Bell, provincial bacteriologist; Dr. Hilton, of Ottawa; Dr. Hilliard, Dr. J. S. Mack, Dr. F. H. Schell and Dr. J. G. Rutherford, C. M. G., of the Department of Natural Resources, of the Canadian Pacific Railway. The officers elected for 1917 were as follows: Dr. Thompson, president; C. D. McGilvray, secretary-treasurer and registrar, and Drs. Dunbar, McGilvray and Schoultz, examiners. The council in addition to the foregoing officers were Drs. Leadbeater and Hilliard. New members of the association during the year were reported as: Drs. M. Carson, Rossburn, M. H. Taylor, Oak Lake; W. J. Shaw, Killarney; T. C. Millar, St. Paul, and G. C. Bowes, Macgregor. Dr. Hilton, of Ottawa, and Dr. J. P. Molloy, of Morris, were elected honorary members.

---

A bill was passed by the Iowa legislature recently allowing physicians and dentists to get alcohol for use in their business. An amendment proposing to allow it to veterinarians was killed by the senate, and a committee representing the veterinarians of Iowa made a strenuous protest against this discrimination. It was stated that the veterinarians of the state will fight the dry law in the special election next October unless they are granted the same privileges as physicians and dentists with respect to procuring alcohol. Dr. J. I. Gibson, state veterinarian, is reported to have said: "Sick calves need eggnog. Veterinarians treating farmers' blue blooded animals will tell them so, too, and that particular phase of prohibition won't please the farmer very well when a $1,000 calf dies."

---

### NEW MICHIGAN VETERINARY ASSOCIATIONS

The Tri-County Veterinary Society, embracing the counties of Macomb, Oakland and Wayne, Michigan, was organized at Detroit, March 17th. Meetings will be held quarterly. Dr. J. J. Joy, of Detroit, was elected president; Dr. Judson Black, vice-president; Dr. H. Preston Hoskins, secretary-treasurer.

The Central Michigan Veterinary Medical Association met at Alma, Mich., March 22nd, and elected officers as follows: Dr. Jopplin, of North Star, president; Dr. Erwin, of Alma, vice-president; Dr. D. T. Rapp, of St. Louis, secretary-treasurer.

The Western Michigan Veterinary Medi-

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**BECAUSE** it is supplied in tablets, and in bottles containing weighed quantities for the extemporization of solutions of standard strength ready for immediate use.

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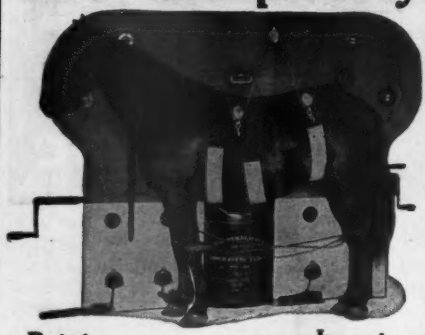

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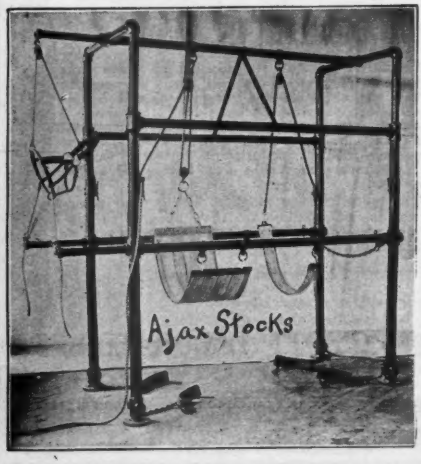



cal Association composed of veterinarians of Kent, Muskegon, Ottawa and Allegan counties, was formally organized at Grand Rapids, March 23rd. Dr. George Hare, of Allegan, was elected president; Dr. W. E. Elzinga, of Grand Rapids, Dr. St. Clair Clark, of Whitehall and Dr. S. Tacoma, of Jenison, vice-presidents; Dr. C. S. McQuire, of Grand Rapids, secretary-treasurer.

Dr. W. F. Jones was elected mayor of McCook, Neb., at the spring municipal election.

Dr. M. A. Purdy, vice-president of the Kentucky Veterinary Medical Association, advises that the next meeting of that organization, June 20th and 21st, at Shelbyville, promises to be the biggest gathering of veterinarians ever held in that state.

Dr. S. L. Brown, formerly of Portland, Ore., has moved to Newburg, Ore., where he has acquired a farm of 467 acres. He has incorporated his practice and the farm under the name of The Farview Farm Co., and his object is to develop an up-to-date general stock farm.

An anti-hog-cholera serum plant will be located at Taylorville, Ill., by Wm. Wood & Co., of Kansas City, Mo., who have purchased a farm near the city limits for $14,000.

The Black Hills Racing and Stock Growers' Association was organized at Hot Springs, S. D., recently for the purpose of staging a series of horse races during the summer and fall months.

The Humane society designated the week commencing April 16th, as "Be Kind to Animals" week all over the United States. Schools were presented with pennants reading "Be Kind to Animals," and daily papers throughout the country had special articles regarding animals. April 22nd was known as Humane Sunday and sermons appropriate to the day were preached in several churches.

Dr. P. H. Gregory, of St. Charles, Mich., has bought a farm near Mexico, Mich., where he will raise pure-bred Jersey cattle and Poland China hogs.

Dr. Burton R. Rogers has resigned as dean of the St. Joseph Veterinary College. Dr. E. A. Logan, city bacteriologist, has been appointed to succeed him. Dr. Rogers has not announced his plans for the future.

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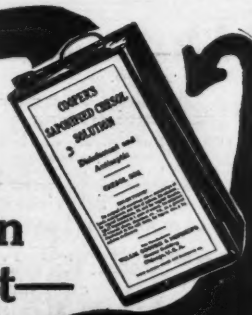


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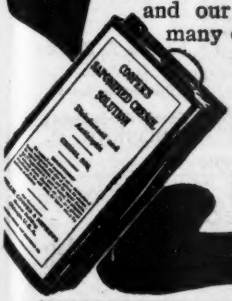


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State Agricultural College, took the state veterinary examination at Bismarck, N. D., April 12th. The three men are Ben Bjornsen, Fred Lowe and Vego Mikkelson, all of Fargo.

---

A pair of trotting pinto mules was recently purchased at Hartsdale, N. Y., for $5,000.

---

A pet cat at Crichton, Ala., is reported to have gone mad and bitten twenty people.

---

Dr. George C. Pilkington, of Parkert, S. D., has been appointed by the state veterinary board as chief field examiner for contagious diseases among live stock, with a salary of $10 per day and traveling expenses. He will make his headquarters at Pierre, S. D.

---

Dr. A. W. French, state veterinarian of Wyoming, says that there are 250,000 horses in that state available for the use of the United States Army, and that since most of them have been raised on the range, they are especially suitable for cavalry purposes as they possess the necessary stamina and endurance.

---

Dr. X. G. May, of Fort Smith, Ark., recently underwent an operation for appendicitis, and according to the latest report he is now well on the way to recovery. He states that the April issue of the AMERICAN JOURNAL OF VETERINARY MEDICINE reached him at the hospital four days after the operation and afforded him an interesting way of occupying his time.

---

Dr. E. O. Ericson has been appointed as assistant city health officer for the city of Eveleth, Minn., at a salary of $125 a month. He will combine the duties of meat inspector, sanitary inspector and veterinarian.

---

Dr. J. W. McGinnis, of Ord, Neb., has been appointed a member of the Nebraska

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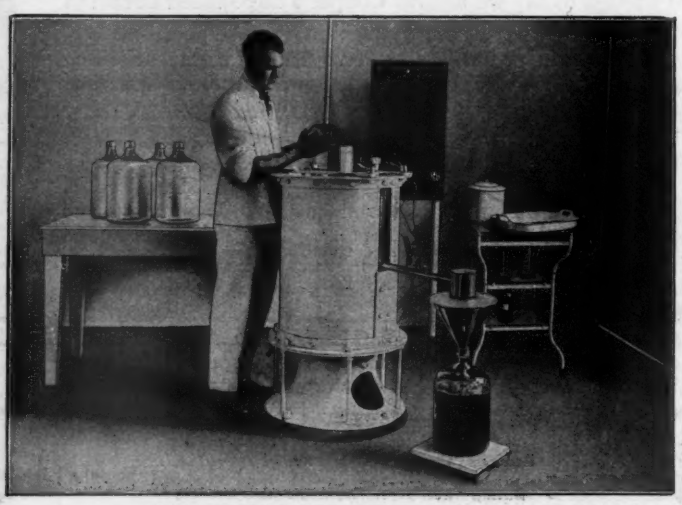

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veterinary examining board to succeed Dr. G. R. Young, whose term has expired.

A hay famine in the vicinity of St. Anthony, Idaho, during March resulted in the death of several head of horses and cattle from starvation. Blizzards tied up the railroads so that hay could not be

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moved from the Teton basin, from which stock owners have been accustomed to get their supply.

Dr. A. M. Heald recently moved from Dubuque, Iowa, to Ogilvie, Minn.

An investigation of the Illinois State Live Stock Commission was begun March 20th by the attorney general's office. Live stock owners claim to be out of more than $200,000 in the sale of cattle suspected of being diseased.

Forty members of the senior class of the Chicago Veterinary College were the guests of Samuel Insull on March 31st, at his stock farm near Libertyville, Ill.

Dr. D. F. Luckey, state veterinarian of Missouri, sent out a letter to each of the 11,000 school district clerks of the state during the latter part of March. The letter was read at each school meeting on April 3rd. It was a declaration of war on hog cholera.

Dr. Stanley L. Pilgrim, of Milwaukee, Wis., was recently appointed assistant veterinarian in the veterinary corps of the new battalion of artillery organized by the Wisconsin National Guard.


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Herpes
Alopecia
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---

The Jay and Randolph County Veterinary Medical Association met at the office of Dr. W. W. Conners, Farmland, Indiana, March 7th. The members in attendance were Dr. Hinshaw, of Winchester; Dr. Persby, of Modoc; Dr. Reed, of Dunkirk; Dr. Peters, of Redkey; Dr. Campbell, of Geneva; Drs. Culbert and Gott, of Portland; Dr. Kelly, of Ridgeville; Dr. Bayles and Dr. Conners, of Farmland; Dr. Leveson, of Indianpolis. The following veterinarians connected with the Bureau of Animal Industry were present: Dr. York, of Winchester; Dr. Olson and Dr. Willis, of Richmond, and Dr. Atherton who had charge of the foot-and-mouth disease eradication in Indiana and Michigan and who will take charge of the hog cholera control work in Maryland. The government veterinarians spoke on the control of hog cholera. Dr. Hinshaw and Dr. Conners demonstrated an operation for laryngeal hemiplegia. Dr. J. V. Bayles, of Farmland, is secretary of the association.

---

Dr. D. M. Smith, of Hume, Ill., and Mr. H. J. Harrington, of St. Joseph, Ill., an instructor in chemistry in the Terre Haute Veterinary College, met with a peculiar automobile accident near Catlin, Ill., March 10th. Mr. Harrington was driving the car, a Ford, owned by Dr. Smith, when a gust of wind hit the machine as it was going through a sandy place, causing the driver to lose control of it. The auto dashed down an embankment and turned over, pinning Dr. Smith under the car. Mr. Harrington was thrown clear of the wreck and escaped with only slight bruises, but Dr. Smith suffered a badly lacerated face and injured right eye.

---

The *Tallahassee* (Fla.) *Record* has the following to say regarding the need for regulation of veterinary conditions in that state: "Florida should have a board of veterinary examiners to regulate the practice of veterinary medicine and surgery in Florida. They are now under the state board of health which has little time to give to them. The result is that Florida is a dumping ground for the profession, or professed profession, and the state is flooded with quack veterinarians. Only two southern states are without state veterinary examining boards, and only three or four other states in the entire Union permit any and everybody to practice on stock at the expense of the owners. The board of health, itself, would be pleased to be relieved of the veterinarians and certainly Florida needs a board for the examination of horse and cow doctors."


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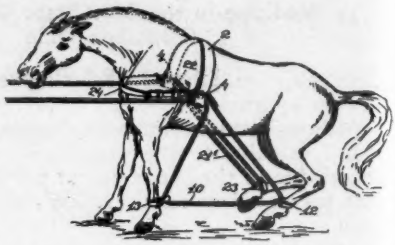

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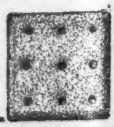

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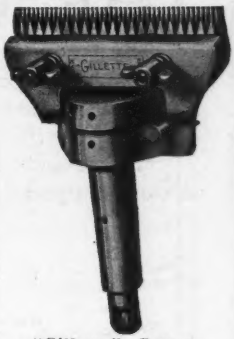

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Dr. Hadwin, of the Canadian Department of Agriculture, who has been investigating the possibility of swamp fever being spread by some insect carrier will co-operate with Dr. Ransome, of the United States Bureau of Animal Industry in a further investigation of swamp fever this summer. Dr. Ransome is an expert on parasites of domestic animals and the United States authorities have consented to his coming to Canada and assisting in this work, Saskatoon will probably be selected as the central field of investigation, in which case the University of Saskatchewan will offer the facilities of their laboratory to the investigators.

---

Dr. Eldon Smith, city veterinarian, of Grand Rapids, Mich., was injured by his pet horse on March 20th. The horse became frightened and stepped on the doctor, pulling the buggy across his body. Dr. Smith's thumbs were sprained and his body bruised.

---

Dr. O. N. Johnson has bought out the practice of Dr. William Madson, at Appleton, Wis.

---

A meeting of the deputy state veterinarians of Missouri was held at the St. Joseph Veterinary College, St. Joseph, March 27th.

Dr. Ocie Carter, of Bardwell, Ky., was elected secretary of the Jackson's Purchase Veterinary Association at its initial meeting at Mayfield, Ky., early in March.

---

Dr. J. L. Redding, of Russell, Ill., and Miss Florence Powell, of Waukegan, Ill., were married at the latter city recently. They will make their home in Russell, where Dr. Redding has been in practice since 1913.

---

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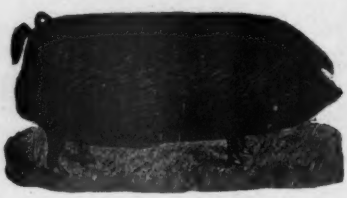

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